The Builder.

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THE stern warning given to the Metropolitan Commission of Sewers by Mr. Phillips, their chief surveyor, and his proposal to construct 20 miles of tunnel sewer at such a depth from the surface, say "100 feet below the bed of the river," as would render it independent of all barriers,—have excited considerable attention, and seem to call for some observations on our part. We have watched the proceedings of the new commission with much solicitude from the first, and in our pages will be found *the only continuous public record of their proceedings in open court.** The space which this record occupies is large, and we have, out of consideration for that section of our readers who may not feel immediately interested in the matter, avoided enlarging it by observations. The present position of the commission, however, is so extraordinary, that to pass it by without comment is impossible.

We need not remind our readers in other than the shortest sentence, that the old Westminster Commission was superseded (and the other commissions went with it), mainly through the efforts of Mr. Leslie and Mr. Byng, two of its members, and the statements made, at what then seemed great pecuniary risk, by the clerk of the commission, Mr. Hertslet, and the surveyor, Mr. Phillips. About a year and a half ago the new commission was appointed, and these two members of the old body and these two officers were, as a matter of course, put on it. This was done, we say, but a year and a half ago, and we now find the new commission exactly in the position of the old one previous to its dissolution. Mr. Byng has withdrawn himself; Mr. Leslie has ceased his regular attendance; the surveyor considers it "time to speak out, both for the credit of the court and for the reputation of its officers," and to prevent proceedings "calculated to bring the commission into ridicule;" and Mr. Hertslet, whose ability, courtesy, and fitness for his office all have acknowledged, says he can no longer go on with the commissioners, and gives evidence of the strength of his conviction by the surrender of nine hundred good pounds a-year.

This surely is a conjunction of circumstances which should lead to a careful and searching self-examination on the part of the commission. Without expressing any decided opinion at this moment, we earnestly invite them to it, our anxiety simply being to see the commission working unanimously and well for the public good; and this, we are quite sure, is the desire of the excellent nobleman, the Earl of Carlisle, who presides. The majority of the commissioners scarcely appreciate the magnitude of their task, or see, what is the fact, the utter impossibility of effecting it satisfactorily by the mode they are now pursuing; some few of them, indeed, we have no hesitation in saying, are quite unfit for the office. The establishment of principles has been sadly neglected; the—but we will not now speak harshly—the commission has had difficulties to contend against, and may yet claim our indulgence for a time.

To add to the present troubles of the commissioners, they have been thrown into Chancery. In pursuance of a recent order, the officers of the commission proceeded the other day to fill in the putrid and offensive ditches at Bermondsey, in the vicinity of which many fatal cases of cholera have recently occurred, and in consequence of this proceeding Mr. Rains, the owner of the property, has filed a bill in Chancery to restrain their operations; in which he prays that the commissioners may be decreed to give notice of the intended nature of their operations, that he may be enabled to make a proper claim for privilege and compensation money, or to make the necessary deposit in the Bank of England, according to the Lands Clauses Act, 1845, and that in the meantime the Metropolitan Commissioners may be restrained from doing any works which may affect his interests. The Vice-Chancellor gave the plaintiff leave to move on Thursday morning last for the injunction as prayed by the bill.* On that day, the subject having been partially discussed, was postponed till Saturday, in order that the commissioners, should they think fit, might have the opportunity of exhibiting their plan of operations. The Judge, however, stated his decided opinion to be, that their proceedings were illegal, unless protected by the 61st section of their Act, enabling works of haste to be done without notice. The plaintiff's counsel responded, that this was a work that would occupy *three months*, and to proceed with it without notice, therefore, must be illegal on his honour's showing: the 61st section did not apply to such works at all. We shall see.

Now, as to the proposed tunnel sewer. The surveyor's letter, which has caused such commotion, is one result of the *committee system*.

Two plans for the improvement of the drainage of Westminster,—one by Mr. Austin, the other by Mr. Phillips,—were made sixteen months ago, and appear to have been referred to the "Survey Committee." Members of the commission have asked for them at various times,—but the court, as a court, has heard nothing of them. On the 15th of June, according to Mr. Phillips, the Survey Committee passed resolutions "approving in effect the suggestions of Mr. Austin's report;" and then, forthwith, comes out Mr. Phillips's letter, warning the commissioners "against attempting to execute the works therein contemplated," and stating that these are "wholly impracticable, and unworthy the objects which should be kept in view for the perfect drainage of this great metropolis;" containing, moreover, an entirely fresh suggestion for improving the drainage,—that is, fresh so far as the commission is concerned. Now, this certainly does seem rather a precipitate proceeding on the part of the surveyor, scarcely warrantable; unless, indeed, those who are behind the curtain see that the resolution of a committee is in effect tantamount to a decision of the court, in which case the object might be to prevent the committee from bringing up their report in the threatened shape.

Mr. Austin's plan, which has been called the "converging system," is to divide the locality into certain districts, and to construct in each an enormous cesspool, or "sump," as he terms it, to which the drains of the district are to concentre. The contents, thus accumulated, are to be raised by steam-engines, and distributed from time to time, through subterranean pipes, over the country, or into the Thames. This plan, with every consideration for the ability of Mr. Austin, and the eminent engineers said to have been consulted upon it, is exceedingly unsatisfactory and objectionable. The great desideratum is to remove the refuse from us, not to accumulate it amongst us, and, moreover, to do this without contaminating our noble river, or transforming what should be a means of purification and a source of health, into a stream of corruption and the fruitful parent of disease.

All are now agreed as to the necessity of this latter condition, the preservation of the Thames: to persevere in the present course would show insanity, and all honour should be given to Mr. John Martin and others, who have been urging this point for years, before the public mind was awakened to its importance.*

The deep sewer proposed by Mr. Phillips is to be constructed in a slightly and uniformly curved direction, from Kingston on the western to the Kent or Essex marshes on the eastern extremity of the jurisdiction of the court, and there suitable reservoirs are to be provided, whence the refuse could be pumped up by steam power, and used either in a liquid or a solid state. It is to take off the whole of the house-drainage and other waters which at present compose the ordinary flow of the London sewers in fine weather, and the capacity of a tunnel for such a purpose he estimates would be 8 feet at Greenwich and 6 feet in diameter at Pimlico. In its passage it goes under the Thames twelve times, as well as under the West India Docks. The cost of 6 miles proposed to be immediately done he puts at 200,000*l*.

The general idea is not a new one, and for the purposes of the public it is none the worse for that.

In 1843 Mr. Thomas Cubitt published a short pamphlet, entitled "Suggestions for improving the state of the River Thames and the Drainage of London" wherein, after pointing out the injury done by discharging the sewers into the Thames, he says,—

"My idea is, that the best means of obviating this evil would be to conduct the sewer drainage at once from the west and north parts of London, by the shortest and straightest lines that can be found, to a place to the east of the town (and perhaps the low lands of Plaistow or Barking Level would be the best calculated for the purpose), and there, near to the river, to form one or more very large reservoirs to receive the discharge from the sewers, where it should remain during the flow of the tide, having gates or sluices to be opened as

* Whether it is desirable to continue this may be open to question.

* A meeting of the court was held at a very short notice on Monday last, when the following resolution was passed:—"That whereas it is of the greatest importance that the works in progress should not be stayed; and whereas an Act of Parliament provides for compensation to parties sustaining damage,—the application to the Court of Chancery, of which notice has been given by Mr. Henry Rains, be opposed, and that the solicitors of the commissioners have authority to give or accede to such undertakings or terms as the Court of Chancery, on the hearing of the motion, may require or approve in reference to the supply of water, or otherwise, and to agree to any reference, and to the plaintiff's right being tried at law, or otherwise." The chief surveyor presented a report, which set forth that it would be necessary to lay down about 2,300 feet in length of 12-inch pipe, for the purpose of supplying the tanneries and other works with water, the expense of which would be 350*l*.; and to accommodate the drainage of the houses and premises draining into the streams, about 3,780 feet of 9-inch pipe would be required, at an expense of 470*l*. These works would enable one branch of the mill-stream to be filled up as far as George-row, as also another branch from Little George-street to Dockhead, leaving the mill-ponds to be dealt with hereafter. Other resolutions were passed showing that the commissioners are determined to proceed with the works.

* Mr. Martin has recently issued several pamphlets and reprints, showing a number of important suggestions made by him from time to time,—"Thames and Metropolis Improvement Plan," by John Martin, K.L. London, Lindsey House, Chelsea, 1849; "Reprint of Report of the Committee appointed to take into consideration Mr. Martin's plan for rescuing the Thames from every species of pollution," 1836,—and some others. Mr. Martin deserves the best opinion of his countrymen.

the tide goes down; so that it would only be allowed to mix with the river when on its passage to the sea, the gates being closed before the tide changes. By this plan none of the sewer water could travel back to London. With this view very deep sewers might be made, of sufficient capacity to take a large quantity of water in the most direct way, and to receive the contents of all the sewers crossing the lines. For example: one great line might be made to commence at Paddington, going along the New-road by King's Cross (or Battle-bridge), and there taking the Fleet Ditch; from thence, running towards the east by Islington, passing under the New River and the Canal, through Hackney and Bromley, and passing below the river Lea to its great receptacle: the distance from Paddington by this route would be only about 12 miles, being 6 miles less than the present course, which has to travel with the river, by all its windings and bendings, round the Isle of Dogs, and all other obstructions. Another great line might be carried along Oxford-street to the bottom of Holborn, where it could be made sufficiently deep to take the contents of that part of the Fleet Ditch, and which might be lowered from the river to run in that direction; then to continue across Smithfield, the grounds of the Charterhouse, along Old-street by Bethnal-green, and so eastward, to join the great outlet. This would give an opportunity of draining many parts that are in a very crowded state, and at present without sufficient means of drainage."

For the south side of London he proposed a similar deep sewer running towards the east, on the other side of the Thames.

The writer afterwards makes some observations on the means this arrangement would afford of trying experiments as to extracting some part of the immense quantity of fertilizing matter that is now wasted, but he very properly urges that the first consideration is to get rid of the refuse, without poisoning the river.

A meeting of the commissioners was held on Thursday, the 5th, and it will be seen in the report of their proceedings which is appended, that they directed the surveyor to submit full details of his plan to a special court to be held on the 23rd. Every willingness was professed to give it fair play, and, although some of the commissioners are very angry with the surveyor, and threaten his dismissal unless the first letter be withdrawn, they have agreed to postpone the consideration of his offence till his plan is fully before them.

The tunnel sewer is not without its difficulties and objections, but we are disposed, nevertheless, to think that the idea (however it may be modified) must be carried out now or hereafter. Lord Ebrington presided, and we would compliment his lordship on the good feeling and pleasant manner which he exhibited.

July 5.—A report was received from Mr. Gotto, assistant-surveyor, on the subject of a complaint that had been made by the Speaker of the House of Commons, of the offensive odours arising in the neighbourhood of the Houses of Parliament. He attributed a portion of the same to St. Margaret's churchyard, which was completely filled up with bodies in a state of decomposition, having saturated the soil with gases penetrating into the sewers; and from the inquiries he had made, it appeared that particular gullies were offensive at one time and not at another, which might be accounted for by the wind down one grating forcing the gases up another.

Mr. Chadwick moved that the subject be deferred to the next court, which was agreed to.

Sir Edward Milne, from the Westminster Improvement Commissioners, attended the court, and wished to know the views of this commission as to the general system of drainage that would be finally adopted for this district, as they were unable to commence operations until some general plan should be laid down. They should be very shortly in a position to open the new Victoria street, but no builder would look at it until such plan was laid down.

Lord Ebrington promised speed.

On the resolution of the general committee of June 28 being read—"That the communication of Mr. Phillips to the court, without reference to the merits of any scheme alluded to therein, is wholly unwarrantable; and that unless the next court shall receive an assurance from Mr. Phillips, that his letter is unequivocally withdrawn, and regret be expressed to the court for the nature of the communication, it be recommended to the court that Mr. Phillips should not continue in the service of the commission,"

Lord Ebrington said that this subject involved two questions, viz., the suggestion of a plan by an officer who had devoted much time to the subject, having had great facilities of local knowledge and experience; and secondly, certain expressions he had used at the time. Before inquiring into the latter, it would be for them to consider whether the outline of the plan so drawn out should be accompanied with details and estimates. He understood that Mr. Phillips had already got a sketch drawn out, and therefore he (Lord E.) thought the best course would be that a separate day should be fixed for their consideration. They should take care that the public service should not be damaged by any personal matters, however unfitting those feelings might be for the dignity and proper working of the commission. He would accordingly move, that the details of the plan should be brought up on the 23rd, and that the same be previously printed.

Mr. Leslie seconded the proposition of the chairman, without then expressing any opinion on the plan.

Mr. Byng hoped that before proceeding in the question, they should have both plans (Mr. Austin's and Mr. Phillips's) laid before them.

Mr. Chadwick said Mr. Austin had produced no plan for the entire drainage of London.

Sir H. de la Beche vindicated the acts of the Survey Committee, who, he contended, had given no opinion whatever on any particular plan. Whatever was proved to be the best would be adopted. They were merely the trustees for the public, to do that which was the best for their interests.

A long desultory conversation ensued on the subject, in which Mr. Chadwick, the Rev. W. Murray, Mr. C. Johnson, Mr. Slaney, and Dr. Arnott took part, and the motion was finally carried.

The following resolution of the General Committee was then read:—"That it be reported to the court, that the committee, taking into consideration the zealous and efficient services of Mr. Hertslet to the present and past commissions of sewers, would be happy if Mr. Hertslet would feel willing to continue in their service; but in any case, for their own satisfaction, the commissioners would wish to receive from Mr. Hertslet any communication he may think useful to make for their information."

Lord Ebrington moved its adoption by the court, and expressed the happiness he should experience if Mr. Hertslet should continue in the service, but would not press him to do so against his better judgment, or with any sacrifice of his health. Should he persevere in his determination to retire, he trusted they would follow the same course in the question of his retirement as they had formerly adopted in the case of Mr. Roe.—Mr. Byng condemned such a course, in the formation of a nondescript office; he had the word of Mr. Hertslet that he now sought no pension.—Mr. Hertslet said he had not waived his right on that ground, but in his present position he was too proud to receive a pension out of the ratepayers' money.

Mr. Bullar said if by any modification of the onerous duties Mr. Hertslet could be induced to remain in the commission, he was sure it would receive their unanimous approval.

After a few words from Mr. Slaney, the motion was put and carried unanimously.

Mr. Hertslet believed such a course would be attended with delay. He had drawn up some reasons for his retirement, which he now had in his pocket, but as they might apply to the future operations of the commission, he begged at once to retire from the service, and that they should appoint his successor.

After a long discussion, the following resolution on the subject of improvement rates was agreed to:—"That a separate department be constituted for the purpose of calculating and preparing improvement rates for all the works performed for the benefit of ratepayers, in such a manner as to diffuse the cost of each over a series of years, and apportion the amount to each ratepayer in the measure, as nearly as possible, of the benefit he derives from them."

ST. MARTIN'S CHURCH, BIRMINGHAM.—An architect, through the local *Journal*, calls attention to the dangerous state of the spire of this church, and its rapid decay. On examination, he finds its departure from the perpendicular to be far greater than it was, and its vibration during bell ringing to be rather alarming. The whole edifice is thought to require restoration or rebuilding, which there are surely people in Birmingham quite rich enough and ready enough to do.

AN ATTEMPT TO EXHIBIT THE TRUE PRINCIPLES OF ARCHITECTURAL AND PICTORIAL EFFECT IN REFERENCE TO STREETS, AND TO TOWNS GENERALLY.*

I HAVE pointed to natural principles in reference to streets, but it must be added, that on these principles the art itself is based; for architecture, rightly considered, is an ideal imitation of a prototype, which may be found in the works of creation, which furnishes it with analogies. It is not the literal forms that architecture copies, but the principles they disclose; these are the rules of art, the geometry of which is but an instrument in its hands. In nature, designs may be everywhere discovered, and a secret rule which, like the laws of the Medes and Persians, altereth not. The first business of the student is to study these laws, and trace her beauty to its spring. Nature presents us with models eminently fit for our purpose; scarcely any of her objects, her groupings, or her combinations, but what are suggestive of principles for our guidance in architecture. "There is not one single object in nature," says an eloquent writer upon art, "which is not capable of conveying ideas of beauty, and which, to the rightly-perceiving mind, does not present an incalculably greater number of beautiful than of deformed parts."

To this appropriating of the principles of nature true art owes her origin, and it is essential to her existence and progress. Nature is the true genius of architecture; her beauty is the muse—the inspiration of the architect: by a close study of nature, I consider the resources of the art may be greatly extended, its capabilities increased and enriched, and effects produced beyond anything that now exists or that the world has yet seen;—whilst, on the other hand, if we lose sight of these principles, all must become anarchy in the mind, which will be a prey to the most incongruous and whimsical associations.

Versed in these principles, and enamoured of their beauty, the student will have no difficulty in applying them to art. He will perceive that unity and variety are the ingredients of beauty; that a building or street should have its various component parts strictly subordinate to the general design, and harmonizing one with the other, though each a distinct composition in itself; and in designing what in stone and wood is to give pleasure to the mind, he will consider the relative effects of form, proportion, and arrangement, as they exist before him in creation, and work in accordance with those principles of beauty and harmony which are developed there.

If I am correct in this, I shall not be deemed hasty in my condemnation of the invariable use of the straight line in streets at the present day. What, I would ask, forms the chief beauty of a river or stream? Do those splendid phenomena, the magnificent characteristics of mountain scenery, owe their beauty to the straight line? The rocky pass, the verdant valley, the interesting combination of glade and thicket, woods, groves, hills, and lakes,—have not these been looked upon by the architect in vain? Nature seems to abhor a straight line as she is said to do a vacuum. Yet while every leaf, every blade of glass, every part of the human body, presents us with some beautiful curve for imitation in works of art, both streets and houses might be pointed out in which scarce any line but the straight one can be found.

If I wanted an example of a street in which every precept of nature had been unheeded, I could not do better than instance a well-known one in Liverpool, viz., Shaw-street, than which, perhaps, nothing more monotonous could be found. Formed on level ground, or nearly so, of one straight line, and, what is the most strange, though the houses are not enlisted under one design in the shape of a terrace, with the usual arrangement of centre and wings, the houses, as if cast in one mould, are from end to end fac-similes of each other. I appeal to any gentleman who has made the observation, whether he ever experienced in that street any of those sensations of pleasure that a fine street is calculated to awaken in every cultivated mind. With the exception of a couple of Ionic columns as a door-case to each house, it is one dead merely perforated wall from end to end, devoid of all provision

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* See p. 293, *ante*.

for light and shade, innocent of anything that can relieve the wearied eye, or awaken a spark of interest in the mind. I mention this street because it is one of those in the design of which (if we are to have beauty in street architecture), from the cost and size of the houses, we have a right to expect some acknowledgment of the influence, and some obedience to the laws, of the beautiful. But it is the fault, in a greater or less degree, of many other streets, and arises from the predominance in point of influence, of men who consider the beautiful incompatible with the useful, and have no idea of the moral agency of art. On such a street, as far as all æsthetical qualities are concerned, those of London of the fourteenth century might have looked proudly down!

Men have hitherto been too prone to copy the foregone, to kneel at the shrines of their forefathers, afraid of striking out into new paths, however clearly pointed out by the finger-posts of nature and judgment. The projectors of Washington and the new cities imitated Babylon and other great capitals, instead of going to nature, a reference to which must at any time have a regenerating influence upon the art, renew its exhausted resources, and remove the corruptions to which it is liable from the fetters of prescription, the passing whim of fashion, and other destructive influences.

This beauty I am aware should be subordinate to constructive requirements, and to the dictates of utility, and should in a great measure arise out of them: but it does not entirely so arise,—when these have performed their part, there is something still left in the way of decoration, which must be done under the guidance of judgment and enlightened taste.

I have hitherto considered the picturesque more as to the arrangement and diversity of houses than as regards their individual forms, but the latter is an essential consideration; and there was perhaps never a time when the architect was more thickly surrounded by elements yielding hints and suggestions for originating the picturesque than at present; and though it is independent of styles, yet, for our present ideas of it, we are, I consider, greatly indebted to the rise, development, and fall of the latter.

The Romans, infinitely inferior to the Greeks in purity of style, were superior to them in the pictorial: while less severe in taste and correct in expression, Rome exhibited more variety and richness, and produced greater magnificence than Athens had known. That this was the case her relics attest: the still glorious ruins of her temples, palaces, baths, and triumphal arches (spoils of time yet trophies of genius at which travellers still pause and wonder), bear witness to her architectural display in the days of Adrian. But beautiful and pure as was the Greek architecture, and rich as must have been that of the Romans, who contributed largely to the riches of the art by the introduction of the arch, and by that crowning glory of the art—the dome,—it is the moderns that have produced the grandest combinations, and most striking effects: the enthronement of the Pantheon on the temple of peace was a triumph reserved for Brunelleschi, Bramante, Michelangelo, and Wren;—who, with Palladio, Inigo Jones, and others, united the Greek and Roman elements to produce edifices, which, however far behind the ancient masters in purity of style, marked an advancement of the art in many qualities which nature suggests, and judgment sanctions.

The rise of Gothic architecture, remarkable for the variety of its forms, its profound scientific knowledge, and mechanical skill, introduced an entirely new feature into architecture in Europe, which gave an impulse to the study, and added to the resources of picturesque design. The inferiority of sandstone to marble in point of beauty must have given the new impetus to the struggle for decoration which it involved.

It was the genius of pointed design that first in Europe, leaving the horizontal principle of antiquity, introduced the vertical, which, according to the theory of some, was intended to direct the mind heavenward, and the whole style, in various particulars, to be a sort of hieroglyphical exponent of theological doctrines and ecclesiastical usages. Indeed, its aspiring outlines, its bold projections, and deep recesses, its prominent and deeply-cut ornaments, render it highly capable of the most elaborate expression. And, though much of such particular expression, admitting it to exist, must necessarily refer to doctrines and systems which have passed away, and be so far powerless, yet all must acknowledge that sufficient remains of a purely abstract character, capable of stirring, in no slight degree, the chords of the heart and imagination.

The most perfect examples of pointed design were produced in the thirteenth and fourteenth centuries; some of the cathedrals of that period here and on the continent, in their decorations, seeming to vie with the infinite variety of nature herself; but the picturesque was perhaps never more perfectly embodied than in the ecclesiastical, monumental, and domestic Gothic of the later periods. Our old English, or Tudor, manor-houses houses and cottages, with their bay and oriel windows, turretted and pinnacled gables, niches, ornamental chimney-shafts and embattled porches, are the buildings, which, in their forms, beyond any others, harmonise with those of nature.

The introduction of Italian architecture into England gave a fresh impulse to our ideas of the picturesque, and produced in domestic buildings effects unseen before. The love of the picturesque, as embodied in Gothic buildings, prevented the native architect on its introduction from adopting it entire; the continuous entablatures and flat pediments of the classic architecture, as exhibited at Rome, compared with the bold and varied composition, and endless decoration, of the Gothic, must have had much of the effect of humble prose beside the lofty flights of the poet: perhaps association and other causes attached him to his native style: however that may be, by uniting the general principles of design and composition of the Tudor with the elements of the Palladian architecture, together with something of the quaint decoration of the German and Flemish schools, the style called the Elizabethan was produced.

For some time it was a mere parody on the classic; novelty and error went hand in hand, but something abstractly valuable to art, I consider, was gained; the study of picturesque beauty in connection with the antique orders was advanced, the wholesome effects of which were visible in the designs of Sir John Vanbrugh and others, who endeavoured to call back to the architecture of Palladio something of the spirit of the native Gothic.

Whilst speaking approvingly of the Elizabethan architecture, I wish it to be understood that I do not refer to that mixture of Gothic and Italian detail that is seen in some old buildings,—these were merely transitional; what I understand by Elizabethan is the style that was presented when the transition was complete, and then no Gothic details existed in it; and, consisting of Italian details, implanted on Gothic design and composition only, it is worthy of attention. It was, in regard to the picturesque, a step in advance of the Italian,—which presented in general a straight outline, and suggestive of new combinations of the antique elements, more striking and beautiful than had yet been seen.

It was unfortunate for the art that the love of the picturesque, as engendered by this state of things, united to the most successful efforts to introduce it into the architecture of the ancients, should have been condemned as faults, and have gained for the architects little else than abuse, both from their contemporaries and successors. Vanbrugh, who had an intense feeling for the picturesque, who displayed the most original and inventive genius, and the most consummate skill in composition, was derided and lampooned by the first critics and poets of the day, and regarded almost in the light of an impostor, because he would not reproduce Roman and Greek temples in this country, but attempted to weave into picturesque forms, adapted to native requirements, the elements of the classic, and infuse the most striking features of our own into the architecture of the ancients. His chief works, Blenheim and Castle Howard, though not without faults, sufficiently attest his possession of the qualities which I here attribute to him. There are others who suffered martyrdom in their reputations to their love for the truth in architecture, convinced that whatever the style of a building, whatever the character of its details, the composition may be picturesque.

I am aware that numberless whimsicalities and absurdities have been perpetrated in the name of the picturesque, but maintain, notwithstanding, that the picturesque is not, as has been supposed by many, inimical to purity of style, and that it can be obtained in the antique styles without violating their essential laws. The Greek architecture was for a different purpose to ours,—one which called for simplicity and solemnity. The source of the grand style of Greece was religion. Had they applied their architecture to domestic and other purposes, they would doubtless have engrafted new features thereon, and have drawn upon other principles. St. George's Hall, of this town, though pure Greek in style, and a new erection, is not unpicturesque. Many architects, celebrated in their day, in order to produce picturesque forms and combinations, perverted principle; they sacrificed propriety to the pictorial, but the pictorial demanded no such sacrifice. The picturesque is of no style, but it may be obtained in any. It reigned in Greece and Rome, and may be found in India, and Egypt, and China, at the present day; and though the hand of time may be useful in producing its most affecting associations, it may be had in the newest building, where outline is attended to—where the laws of natural beauty are consulted.

Many of the old towns of the continent, and some nearer home—in Wales, for instance—strangers to the spirit of improvement that has elsewhere been busy in the land, though certainly not models for imitation in this improved age, could not be looked upon by the architect of taste without suggesting to his mind valuable hints for originating the picturesque in houses and streets. The streets of London, so far back as the fourteenth and fifteenth centuries, as exhibited in old prints, with their pointed gables and overhanging stories, though affording no lesson in constructive science, are instinct with beauty: many of them develop principles, and yield striking hints as regards relief, and are highly suggestive of the conditions on which beauty may be obtained.

Time is certainly an agent in producing the picturesque: however injurious in other respects to works of art, he increases their pictorial beauty. To his hand the outlines of a building yield their stiffness: he varies its tones of colour, melting them as it were into more perfect keeping with the local scenery, and assimilating the whole to the condition of creation around. A building grows into harmony with nature by the effect of climate; it becomes adopted as it were by the *genius loci*, and they are united under the influence of the same causes; and when originally constructed in forms that harmonise with the works of God around, "they remind the spectator," to quote the language of Wordsworth, "of a production of nature, and appear to have grown rather than to have been erected; and, when clothed in part with a vegetable garb, appear to be received into the bosom of the living principle of things, as it acts and exists among the woods and fields."

The older towns and cities, therefore, assume more of the picturesque. A town erected at a variety of periods, and in which we behold the work of centuries, presents a proportionately greater variety in style, hue, and shape,—and most towns have in this particular the advantage of the one in which our lot is cast.

I have said that picturesque beauty of design is independent of style. In this I might be borne out by the beauty of most Mahomedan cities, which present, with their array of mosques and minarets (notwithstanding the inferiority of the architecture in the higher principles), an entire result superior to what we see in many of their European compeers. Fancy and feeling, it is true, have been more consulted than judgment, but they have produced a wonderful effect, and are very suggestive to us.

It would be improper, in a treatise of this nature, to omit all mention of sculpture, which ranks high as an element of the picturesque in architecture. Statues were a crowning magnificence introduced on the apex of the temple pediments, as if the genius of the art, or the

spirit of beauty itself, had alighted upon it. Sculpture some one has aptly called "the voice of architecture:" without it, the art is not complete: if it be not a breathing into it the breath of life, it is at least an awakening of it to a higher life, and rendering it capable of a more complete and divine expression. When we contemplate the result of a judicious application of statuary in architectural embellishment, we cannot but regret that so many empty niches should surround our public buildings. This is characteristic of English edifices. It would seem that English people have an antipathy to statues. The expense is, perhaps, one bar to their more extensive employment; but the chief one, I suspect, might be found in influences which had their birth at the Reformation.

There is a fault of modern streets which I have not before mentioned,—they too much resemble each other. I have heard travellers complain of the streets in some continental cities being so much alike that it was impossible for a stranger to thread his way through them. I would give diversity of character to streets as well as to houses, and for this there are resources in architecture. Public buildings, whilst they give life and dignity to the view, play a conspicuous part in producing this desired variety, and characterising their respective streets; and, fortunately, these are greatly increasing in number, both in the metropolis and in the leading provincial towns, where, it must be confessed, despite the neglect of some important principles of beauty, a great deal has of late been done conducive to pictorial effect. In London, though but few fine streets could be named, there are many beautiful spots and interesting views,—many a picturesque nook that the artist would delight to sketch, and that the most uninformed spectator would feel and admire, though perhaps, in the words of Sterne, "without knowing why, or caring wherefore."

But the streets themselves are improved. If we compare London of the present day with London of thirty or forty years ago, we must confess that great is the advantage of the former over the latter; and Liverpool has perhaps advanced in a similar ratio. Streets have been swelling into ampler width, and other provisions of beauty and usefulness becoming more abundant. What I chiefly complain of is, the non-acknowledgment of those principles by which the greatest amount of pictorial beauty would be obtained from any given means; and maintain that the rage for uniformity that has been exhibited in the new streets had its origin in a mistaken notion of beauty; that whatever other advantages that and the straight line may possess, yet to that quality which gives pleasure to the eye, and exhilaration to the mind, they must fail in contributing. I mean no disparagement in other respects to late efforts, by any remarks I have made; I am merely contending for a principle that appears to me to be lost sight of, or at least neglected. I am aware that any errors I may have pointed out are seldom to be charged upon architects. The opportunity seldom occurs for putting in practice such principles as refer to the general form of thoroughfares in towns and cities; and I am also aware that there are circumstances connected with the planning of streets to which they must succumb,—circumstances of so much importance, that this paper may be deemed by some more artistic and theoretical than practical and useful: that it may be suggestive, however, of something advantageous to the art, I am not without hope.

But there are other considerations besides those of architectural and philosophical propriety and pictorial effect, which should have weight in the formation of streets: there are considerations of a sanitary nature, though those principles for which I contend have something indirectly to do with the health; they affect the spirits, and through that medium the body; for what gives interest and pleasure to the mind will, I need scarcely say, have no slight influence in maintaining and improving the physical organs.

Respect should be had in laying out a town and determining the bearing of the streets, to the direction of the prevailing winds. In Liverpool, where the winds are chiefly from the west, the healthful breeze, for a great portion of the length of the town, is excluded by a wall of lofty warehouses, running north and south, and intersected by a very insufficient amount of opening. A good sanitary provision in the arrangement of a town would be the forming of large squares at the intersection of the main streets, and communicating with each other in the direction of the prevailing winds. But this is a subject into which I cannot enter now; it is one upon which alone volumes might be written, and I leave it to those who are better prepared for its discussion. It is every day receiving more and more of that serious attention to which it is entitled.*

SAMUEL HUGGINS.

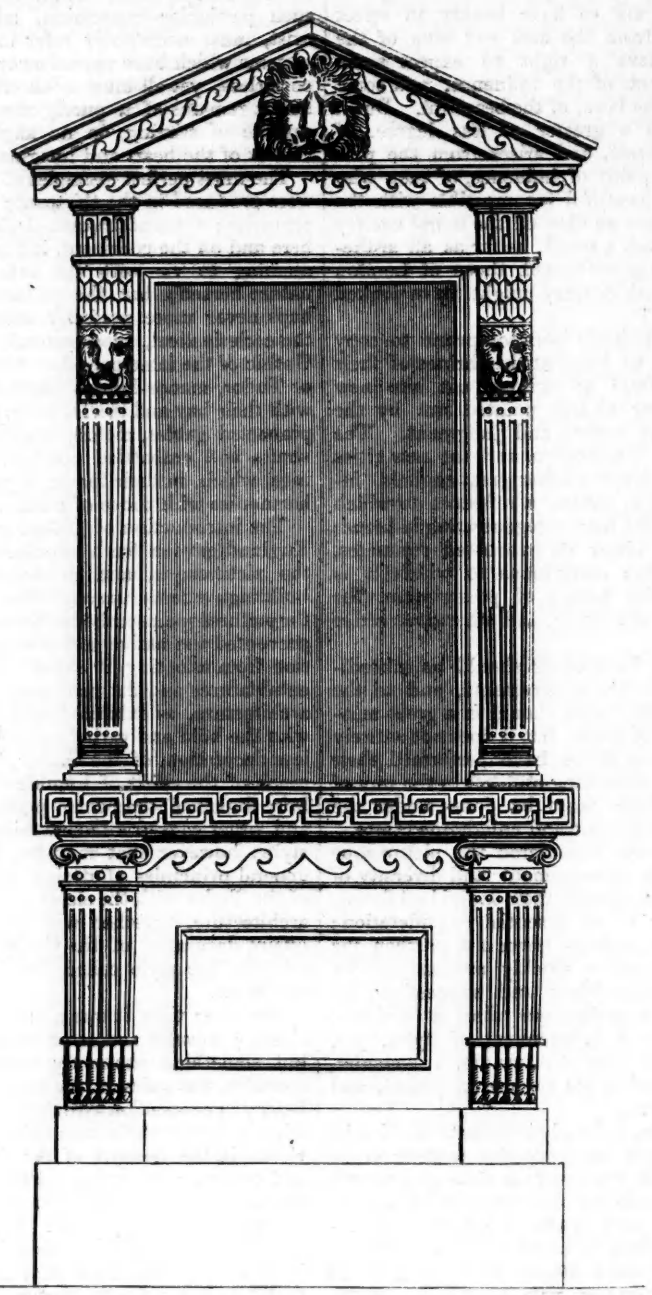
A SAW ABOUT A SAW.—A man sawing with a saw, that was not the sharpest in the world, after vainly trying to use it, broke out at last into the following wise saw:—"Of all the saws that ever I saw saw, I never saw a saw saw as that saw saws."

BLIND GAS-FITTERS.—Tenders for Messrs. Welch and Margetson's new warehouse, Cheapside. Quantities supplied by Mr. O. Tillott.

Edge	£133	12	3
Meacock	114	8	4
Bownes	105	19	1
Strode	95	16	0
Debaufer	90	15	9
Cowan	90	5	7
T. Ledger (accepted)	69	18	0

* This paper was read before the Literary and Philosophical Society of Liverpool.

WINDOW FROM FLORENCE.



THE window represented by the accompanying engraving, made from a drawing by Mr. Lockyer, is novel and not inelegant. It is from a palace in the *Via dei Servi*, Florence, and is drawn to the scale of 1-6th of an inch to a foot. It may go amongst our hints for street architecture.

THE INTRODUCTION OF THE POINTED STYLE.

AT the close of Mr. Fergusson's paper "On the Pointed Arch," read at the Institute of Architects on the 18th June, and which we have already printed in full,* a discussion ensued, in the course of which Mr. Tite remarked that the question as to the invention of the pointed arch, and that as to the time of the introduction of the pointed system were quite distinct, and he thought the most interesting part of the inquiry would be, how was it, and when was it, that the rude architecture of the Romanesque period grew into the pointed style.

Mr. Sharpe acquiesced in the propriety of Mr. Tite's suggestion, that the discussion should be limited to the consideration of that period of architecture in which the pointed arch first made its appearance in Europe. He preferred the architectural rather than the antiquarian view of the question, and to consider the causes that led to the early use and the rapid adoption of the pointed arch in Europe.

* See p. 290 and p. 303, *ante*.

rather than the origin of its form and the country in which it first appeared. He did not wish, however, that it should go forth that that meeting adopted all that they had heard from Mr. Fergusson of the early use of the pointed arch in the east; he begged to enter his protest against the high antiquity proposed to be given to those parts of the buildings referred to which contained it. As regarded the whole of the illustrations of the first class referred to, with one exception, the term arch was altogether inapplicable—the principle was wanting—the form was there; so it was in the first book of Euclid; but forms were not arches: these examples were simply openings formed by stones overlapping one another, and such as any one might make in a common ashlar wall by knocking out the stones. Mr. Fergusson had applied the term "horizontal arch" to this form; he (Mr. S.) understood a very different form under that term—a form very common in Gothic architecture, consisting of a stone beam formed of several pieces joggled together; there you had the principle of the arch. As regarded the buildings of Cairo, there were no doubt a great number which contained pointed arches, but the important question was, what was their date? The proof that was necessary to establish their antiquity was to be sought for under this head, rather than from the frequent occurrence of the feature. Again, Mr. Fergusson had said that the mosque of Amrou had been much pulled about and altered; how could it be proved at this day that the parts in which the pointed arches occur were not amongst the very parts that had been so altered? We should be very chary in receiving assertions as to date, and look very carefully at the proof: if proof most conclusive and satisfactory be wanting, this theory falls to the ground. As regards the question of the introduction of the pointed arch in Europe, he held the opinion that no new feature was adopted in the architecture of the middle ages, which had not some *useful* property contained in it. He believed he might go further and say that, in proportion to the utility of a member was the degree of ornament it received; he would content himself, however, at present, with the former axiom. Of the sixty-six theories contained in Britton's fifth volume of the "Architectural Antiquities," only two attempted to account for the introduction of the pointed arch on this ground. One of these was the well-known theory, due to Dr. Whewell, and enlarged upon by him in his interesting work on the German Churches, which attributed the introduction of this form to the exigencies arising out of the difficulties of vaulting an oblong space, with circular arches, in horizontal courses, as exemplified in the buildings on the Rhine. The other was that advanced by Dr. Young and Mr. Weir, namely, that the use of the pointed arch was originally due to a discovery of its usefulness in diminishing lateral pressure. He (Mr. S.) was disposed to take the latter view; and for reasons that he was about to give at large, in a work now in the press, on the "Early History of the Pointed Arch in the south of France," and which he would shortly explain, with the assistance of some of the plates which he had with him, and which included views and sections of some of the very buildings which Mr. Fergusson had referred to,—the whole of which he had himself visited and measured. In the first place, he must join issue with Mr. Fergusson in reference to his assertion that the pointed arch occurred generally under the circular arch in those buildings, and that its use was therefore anterior to the latter in point of time. He was prepared to maintain that there was a law which regulated the use of the two forms in the same building, and that a very important one,—but one very different from that laid down by Mr. Fergusson, and one evidently traceable to the cause already alluded to. The arches used in the churches of the middle ages might very properly be divided into two classes,—those used for the large openings, such as the vaulting arches, the arches of the crossing, and the pier arches, and which may be said to constitute the framework of the building; and those used for the smaller openings, such as the doorways, the windows, the arcades, &c., and which might be said to belong to the panelling of the structure;—the former class might be properly termed arches of construction, and the latter arches of decoration. In the buildings of the transitional period,—and he was disposed to accept that term, as belonging *par excellence* to those buildings which exhibited the transition from the circular style to the pointed style,—he was prepared to assert, that for nearly half a century the pointed arch was used in the arches of construction, and the circular arch in arches of decoration. This rule was not laid down upon the authority of a few isolated examples; he had a list of no less than eighty buildings in England, France, and Germany, which he had himself visited, in which this law obtained; and he had no doubt that the attention of the members of the Institute being called to the fact, this list would be hereafter very considerably increased; he spoke only of what had fallen within his own personal observation, and he thought that a good rule for every one to follow. Mr. S. then read part of the list of examples to which he referred, and explained that a few exceptions existed, but that they were not of that nature, or to that extent, as in the least to invalidate the law as applied to the whole of the earlier buildings of the transitional period. He stated that the number of buildings belonging to this period was much greater than was generally supposed, even in this country, and that they abounded on the continent; that they possessed peculiar details and characteristic marks perfectly distinct from those which belonged to the Norman, as well as the Early English period, and such as entitled them to separate classification. He explained, that in the latter part of the period the pointed arch began to find its way into the arches of decoration, as in the choirs of Canterbury and Ripon Cathedrals, the former of which belonged to the years 1185-1190; and immediately afterwards rapidly and universally in this country superseded the circular arch. As regarded its introduction into other parts of Europe, he believed that it was in the south of France that its earliest employment was to be looked for; the most usual mode of roofing the large spaces in that country in the Romanesque period was by a longitudinal barrel vault, or semi-cylinder, running the whole length of the building; this plan obtained in most of the large cathedrals, as St. Saturnin, at Toulouse, and the Cathedral of Valence, both of which belonged, upon unquestionable evidence, to the middle of the eleventh century. This was, therefore, naturally the place where we should look for the first appearance of the pointed arch; and here it is in fact that we first find it. We find it accompanied, or rather almost immediately followed, by that slight alteration of detail in the moulding and sculpture which accompanied its introduction in other countries,—and, as a natural consequence, by that reduction in the solid thickness of the walls, and that concentration of abutment at particular points, which indicated here, as elsewhere, the progress of science in construction. To premise, as Mr. Fergusson did, that this style preceded the other; that the pointed arch, in these countries, was anterior to the circular; that the builders went back, in fact, from this advanced point to earlier and ruder principles, was impossible, and was certainly unsupportable by documentary evidence of any kind. Mr. Sharpe then exhibited views and sections of the Cathedral of Vaisson, to which Mr. Fergusson had referred; the Cathedral of Sisteron; the Abbey Churches of Cadouin and Notre Dame, at Digne, and other buildings containing the pointed barrel vault, in support of his assertions,—the actual ascertained dates of which, he stated, bore out what he had said; and in the whole of which the pointed arch was used not only in the vaultings to which Mr. Fergusson supposed it was confined, but in all the other arches of construction, whilst the circular arch prevailed uniformly in the arches of decoration. The speaker then proceeded to notice a class of buildings in which the pointed arch occurred, of a very early, interesting, and peculiar kind, in the west of France, limited both as to number and the district in which they were found, which had been mixed up with those he had just been describing, but which were totally distinct from them, and, in fact, unlike anything else that he knew of in the western parts of Christendom. The type after which these buildings were planned was that of the Church of St. Mark, at Venice—or to go higher still, that of St. Sophia, at Constantinople—and consisted of five large square compartments, forming the Greek cross, and covered with five large hemi-spherical domes, supported by pendentives resting on enormous square piers. This was the type of the plan of the whole of them. In some the design had been mutilated, in others never entirely carried, and in others slightly modified, to suit western requirements; but in the Cathedral of St. Front, at Perigueux, the genuine Byzantine design is presented in its unmitigated Eastern aspect. He then exhibited parallel views of the interior of St. Mark's, Venice, and the cathedral of Perigueux, taken from the same point of view, which presented, with one exception, identically the same features, that exception being the occurrence, in the French building, of the pointed arch in place of the circular arch of St. Mark's, in the large arches which support the domical vault. He exhibited also views and plans of the cathedral churches of Cahors and Angoulême, and the abbey church of Souillac, all similar in their main features to St. Front. To the earliest of these buildings he was disposed to attach a very early date, not only on account of the extreme simplicity and rudeness of the work, and the nature of their details, but also, in the case of St. Front, on account of a certain striking correspondence of fact between the internal and external evidence of the building. He declined, however, to enter into this part of the question, or to make any assertion at that moment as to the period at which the pointed arch was thus used in this part of France, further than to declare his belief that these buildings were earlier than the class he had previously noticed; and, therefore, in his opinion, the earliest not only in France but in the west of Europe. The question still remained for solution—How came these buildings, so unlike any thing that remains in the countries uninfluenced by the Greek church, to be planted in this foreign soil? Was the pointed arch, as seen in these buildings, introduced along with the plan, or was it a local adaptation? We find it neither in its type (St. Mark's), nor its archetype (St. Sophia's). But is it likely that so important a feature was an insertion in a design which displays in every other part so unequivocally its foreign origin? He (Mr. S.) was not disposed to think so. He looked upon the determination of this question as one of no small interest in the history of the pointed arch, and one which might possibly lead to the conclusion that this form did in reality come to us from the East; but it was to be entered upon in a spirit of careful inquiry, and the facts were to be proved, step by step, in a manner which should leave as little room as possible for speculative opinion, or mere conjecture; and, above all, without hastily accepting or rejecting the dates which we might find handed to us by previous inquirers; and never, if possible, without reference to the original records or the earliest existing documentary evidence, bearing upon the history of the building in question.*

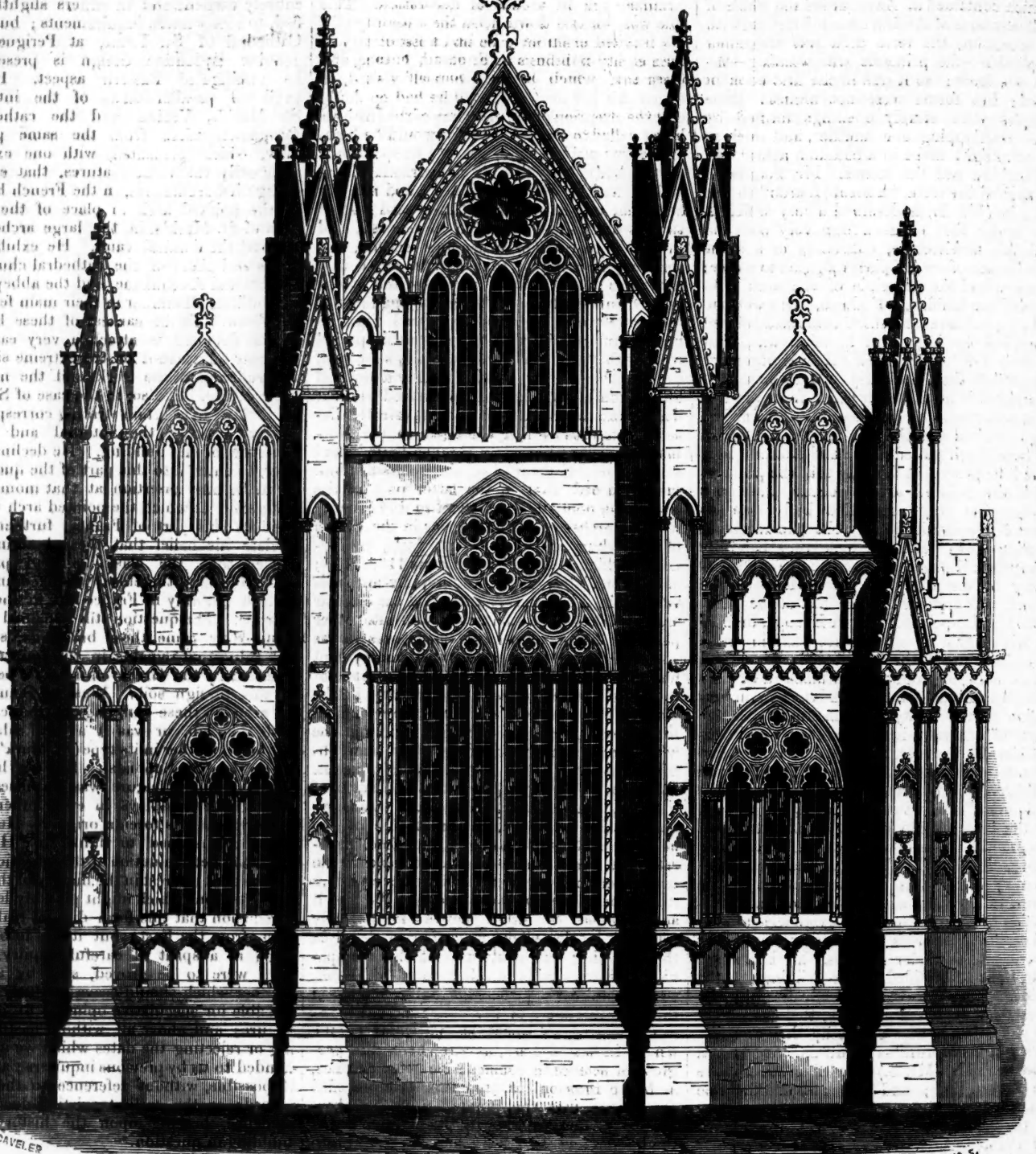
FIRE-PROOF CEILINGS OF WIRE-WORK have been successfully applied, in place of lath, with plaster and stucco as usual, at the Chester Lunatic Asylum. The wires are about ½ in. apart, and the plaster forms an adhesive and serviceable mass, even on both sides. The wire is galvanized, or japanned, to prevent corrosion. Not only ceilings, one would think, but thin partitions and walls in general, might be wired in place of lathed, and risk of fire thus greatly diminished by a process neither patented nor costly.

THE NORTH KENT LINE OF RAIL, which will bring London into immediate railway communication with Lewisham, Woolwich, Dartford, Gravesend, Strood, Rochester, and Chatham, is now about completed, and is to be opened for passengers about the middle of July. The new portion, between London-bridge station and Gravesend, is 23½ miles in length, and, exclusive of rails and stations, the cost of construction—the original contract estimates for which were fixed at 638,000*l.*—will amount, it is stated, to 400,000*l.* only.

* At a meeting of the Institute, held on the 2nd inst., Professor Cockerell read an important paper on the present position of architecture, to which we shall give due attention.

LINCOLN CATHEDRAL.—EAST END.

[13TH CENTURY.]



EAST END OF LINCOLN CATHEDRAL.

ABOVE we have the pleasure to place before our readers a view of the east end of Lincoln Minster, one of the finest of our mediæval buildings, and concerning which we have at various times spoken. Illustrations of the south porch, the fine rose window in transept, and of the chapter-house, a beautiful specimen of pure Early English, have been already given.

We may remind our readers that Lincoln Minster was commenced by Bishop Hugh, at the close of the twelfth century, and was completed by Robert, called *Grosse teste*. The portion here represented is of the Geometrical style, or late Early English, so to speak,—the forerunner of the Decorated.

The engraving is from a drawing by Mr. Caveler, made for the purpose.

CHRONOLOGICAL ACCOUNT OF BUILDINGS IN ITALY AND SICILY.*

Palermo Cathedral.—1170 to 1185, by Walter of Hamell, an Englishman (Knight). Altar to north-east. Little remains of the original building but crypt and portions of south side and east end. The arches of crypt are pointed. 1420, great west door; south door, 1426; and porch, 1450 (Knight).

Monreale Cathedral.—1174 to 1182; the bronze doors, 1186, by Borumano.

S. Eustachio, Rome.—1196; founded in Constantine's time (Rossi and Vasi); has one of the brick towers.

S. Michele, Lucca.—1188, façade by Guidetto (Knight).

S. Sisto, Rome.—1200, restored. Founder unknown, but church mentioned by S. Gregory 600 (Severano); 1200, and restored in 1464-71 (Rossi); 1200, greatly repaired (Rycaut).

Torre dei Conti.—Twelfth century, D'Agincourt, c. 1200 (Rycaut).

S. Maria Toscanella.—c. 1206 (Knight).

S. Maria Plebe, Arezzo.—1216, tower. It is quite like the Roman (Knight).

S. Andrea, Vercelli.—1219, by Thomas, a French ecclesiastic (Knight).

Parma Baptistery.—1196 to 1281 (Knight); 1196 to 1260 (Hope).

Padua Great Hall.—1218, finished. Supposed to have been begun 1172; damaged by fire, 1420; and by storm, 1756 (Milezia).

S. Giovanni in Monte, Bologna.—1221; the campa ile in 1286 (Willis).

S. Francesco, Assisi.—1228, by a German architect (Knight).

S. Antonio, Padua.—1231, begun (Knight).

Ponte delle Grazie, Florence.—1236 (Richa).

SS. Trinita, Florence.—1250, by N. Pisano; enlarged and embellished 1383; campanile 1395; façade 1593 (Richa); altar nearly west.

S. Chiara, Ravenna.—1250 (Fabri).

S. Caterina, Pisa.—1253, by Guglielmo Agnelli, pupil of Nicolo da Pisa. Injured by fire 1651, after which transept was added (Grassi). The upper arches are pointed, but details in general are Italian.

S. Maria della Spina, Pisa.—1230: enlarged 1300 (Grassi); 1230: enlarged and enriched 1323

* See page 256, *ante*.

(Knight). This is the most Gothic-looking building in Pisa, but all the details throughout are Italianised.

S. Antonio Abbate, Rome.—1259 (Vasi, Rossi, and Severano); originally dedicated 467 (Rossi); altar to north. [At this era the pointed style seems to have got a decided footing in Italy, as may be seen at Ferrara, Assisi, Pisa, Vercelli, &c. But these specimens all seem the work of strangers; the details are all Italianised; and we look in vain for any of the beautiful arrangements or details of our Early English or even Norman Cathedrals. I know nothing in Italy of this date which gives any idea of the beautiful scroll-work and other ornaments of the Early English period, nor of the bird's beak, the zigzag, or other Norman peculiarities.]

Scala Santa, Rome.—1216 to 1277, rebuilt from foundations as now seen (Severano); 1585, restored (Vasi).

S. Giacomo Magno, Bologna.—1267; roof 1497 (Willis).

S. Maria Novella, Florence.—1278, by Fra Restoro and Fra Sisto; façade 1349 to 1470; nave finished 1307; campanile c. 1330; struck by lightning 1358 (Richa); altar to north.

S. Maria del Popolo, Rome.—1277, rebuilt, having been built 1099; restored 1660 (Vasi); altar to east.

Campo Santo, Pisa.—1278 to 1283, by Gio. Pisano; arches filled in 1464 (Grassi).

Pal. Publico, Piacenza.—1281, begun (Knight).

Or. San Michele, Florence.—1284, by Arnolfo di Lupo; added to and decorated in 1337-1352, when Orcagna was employed (Richa).

S. Croce, Florence.—1295, by Arnolfo di Lupo; finished 1320. The façade from Porta Maggiore to the door of cloister commenced only in black and white marble, by Cronaca; tower and roof nearly destroyed, 1514; sacristy built before 1330; (Richa); by Arnolfo, son of the stranger who built Gothic church at Assisi (Knight); 1294 (Villani); 1285 (Hope); altar nearly to east.

Foro dei Mercanti, Bologna.—1294 (Willis).

Florence Cathedral.—1298, begun by Arnolfo di Cambio da Colle. Altar to east.

S. Anastasio, Verona.—c. 1300 (Maffei).

S. Fermo Maggiore, Verona.—1313, the subterranean church spoken of as old in 775 (Maffei).

Ospitale Grande, Palermo.—1330, built in one year (Knight).

S. Maria delle Scale, Verona.—1328 (Maffei).

Badia Campanile, Florence.—1330: half pulled down by populace 1307, and rebuilt as now seen; the church has been much injured by fire at various times (Richa); altar to south.

S. Niccolo, Florence.—1332 (Richa); altar to south.

S. Simone, Florence.—1333 (Richa); altar to south.

Campanile, Florence.—1334, by Giotto.

Misericordia, Ancona.—1349: "Hoc templum deiparæ pestem sedanti unico die civitas fidei monumentum eresit. 23 Oct., 1349" (Inscription).

Pal. Ducal, Venice.—1350, canal front, and six return columns; rest of return front 1423-39; by M. Bartolomeo; porta della carta, 1439; internal piazza and façade over, 1485; 1500, by Bergamasco; centre window towards piazza, 1523-1538 (Cicognara).

Ca. d'Oro, Venice.—1350 (Quadri), Cicognara states its date is uncertain.

Monza Cathedral.—1359, front (Hope); fourteenth century (Willis).

S. Maria sopra Minerva, Rome.—1370 (Bunsen and Vasi), 1275; the convent adjoining stands on site and ruins of temple of Minerva (Rossi).

Milan Cathedral.—1386 to 1411 (Oxford Glossary); 1387, doubtful whether by Arler, a German, or by Campione, an Italian; but nearly all architects first employed on it were German; 1388, great east window by French architect (Knight); altar to east.

S. Petronio, Bologna.—1184, consecrated (F. bri); 1390, altar to south.

Certosa, Pavia.—1396, begun; west front by Fossano, 1473 (Pettit).

S. Onofrio, Rome.—1439 (Pistolesi e Vasi); the body is groined, the apse semi-octagon, with pointed windows.

S. Spirito, Florence.—1435 to 1481, by F. Brunelleschi (Richa); altar nearly north.

S. Susanna, Rome.—Originally by Constantine; rebuilt, 800; restored, 1475 and 1600, when front was built from foundations, also gilt ceiling then made (Rossi); c. 290, rebuilt 800 (Vasi); altar to north.

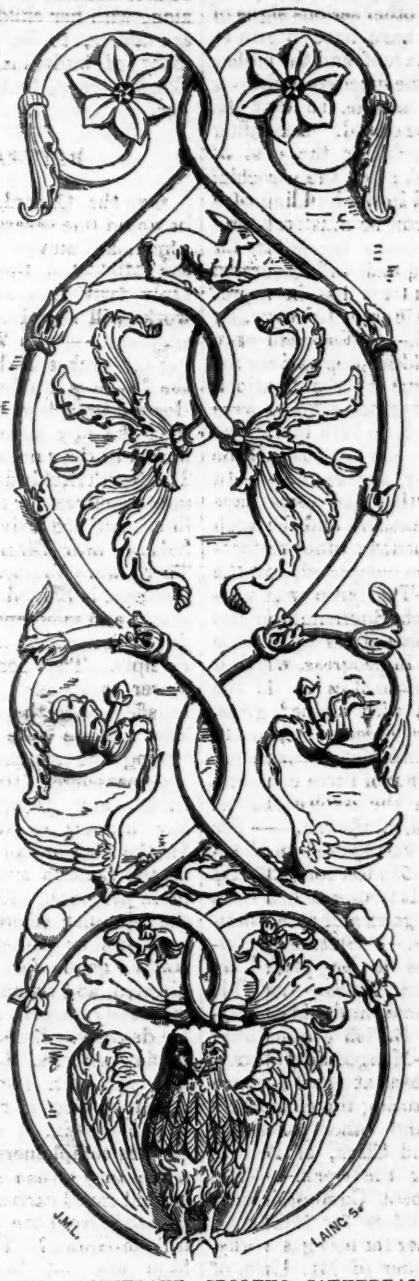
S. Agostino, Rome.—1480 (Bunsen and Vasi), by B. Pintelli; altar to north.

Pal. Vendramin, Venice.—1481, by one of the Lombardi (Cicognara).

Pal. Foscari, Venice.—1390 (Cicognara), 1439 (Willis).

Perhaps the most marked feature of Italian detail is the capital; six distinct styles may be recognised on careful investigation.

DECORATIONS FROM ABROAD.



FROM ARCHITRAVE, SPOLETO CATHEDRAL.

1. Imitation of the Roman, generally Corinthian, often Composite, and sometimes, but seldom, Ionic (S. Stefano Rotondo). This style, as might be expected, occurs in buildings of all ages, from the earliest time to the latest; from Ravenna, in the fifth century, to S. Caterina, Pisa, 1253.

2nd. The peculiar corbel capitals, as in the Roman brick tower, or in many of our Saxon churches. These have no dates which can be strictly relied on, but from their great prevalence at Ravenna, their presence in the ancient church of S. Vitale, and other indications, we may imagine them to be of Greek origin, more especially as the churches in Greece have their windows and domes formed with columns in this style, though rather more ornate.

3rd. Those clearly Greek, the characteristics whereof are so clearly seen at S. Vitale, S. Fosca, S. Marc's, S. Donato, &c.

4th. Wherein the capitals are formed either of foliage cut out in the peculiar hard, flat style; or of animals, or of blocks, with the angles worked out in some ornamental way. These I imagine to be northern importations. They are first seen, so far as I can recollect, at S. Michele, Pavia, and are used at S. Stefano in Bologna, at S. Ambrogio in Milan, Pisa, Modena, S. Zeno in Verona, Palermo, Parma, &c.

5th. Where the Norman seems to have gained somewhat of the lightness of the Gothic, as seen in some of our transition work, as at Lentini, Sciacca, Syracuse, Messina, Ferrara, &c. I look upon these, also, as Transalpine.

6th. Where the intention has been, obviously, to give somewhat of a Gothic character, the sculptor understanding only Italian detail, as at Pisa, Florence, Bologna, &c. At Milan the capitals are tolerably good Gothic.

T. H. L.

ORNAMENT FROM DUOMO, SPOLETO.

THE cathedral at Spoleto dates from a very early period, having been originally erected under the Lombard dukes. Numerous, however, are the alterations and additions since that date. The sculptured piece of ornament here represented is taken from the architrave (in marble) of the central doorway of the principal façade, now, with the two side doors, masked by Bramante's elegant picturesque portico (which, by the way, was given by the "Architectural Publication Society" in their first issue of plates).

THE IRON TRADE.—At a preliminary meeting of masters, on Saturday last, a further reduction of 10s. per ton was resolved on, and it is considered to be very doubtful whether even the prices that now remain after the deduction of the recent nominal or admitted reductions of 30s., can be maintained. A notice of further reductions in wages has also been given.

NOTES IN THE PROVINCES.

THE old church at Halstead, lately decapitated by the removal of its spire—the materials of which were sold to pay the expenses of removal—begins to show other serious signs of decay. The props in the nave have begun to bend under pressure of the roof, and the edifice has been pronounced by the diocesan architect, Mr. Clark, to be quite unsafe, so that the Bishop has ordered it to be closed. According to an estimate by the architect the cost of restoration will be 2,630*l.*; but the parochial resources being exhausted in the building of a new church, 800*l.* alone can be mustered, and the authorities now appeal to the public for aid.——A new font, octagonal and decorated in style of fourteenth century, has been presented to St. Martin's Church, Leicester, by Mr. T. Combe, of Oxford.——Workmen have been engaged at Mansfield in preparations for laying the foundation-stone of the Bentinck monument.——New parochial schools were founded at Foxearth, Essex, on 12th inst. The design is by Mr. J. Clark, and the cost will be 500*l.*, chiefly defrayed by the rector.——In the little church of Bartlow the pews have been replaced by open benches, and the arch in the round tower re-opened; other restorations and repairs have been completed, and the church is re-opened.——The large west window of Holy Rhood Church, Southampton, has been fitted with thick plate glass to exclude noise. Subscriptions are in progress, which it is hoped will enable the authorities to fill the east and chancel windows with stained glass. The gurgoyles, which were objected to, are to be reduced to small appropriate ornaments. ——A stained glass window of three compartments has been put up in the eastern chancel of the church of Mathern, Chepstow.——The new town hall at Yeovil was opened on Wednesday week. The hall is 58½ feet long, 35 feet broad, and 25 feet high. It is approached from the market-house by iron gates and stone steps with cast-iron balustrades.——Statues to Nelson and Wellington are to be placed on Southsea Common, where Nelson trod his native land for the last time, and where Wellington first stepped on British ground after his last great triumph.——Mangotsfield Church is to be repaired and renovated at a cost of about 850*l.*, besides that of restoring the chancel by the lay impropriators and other offerings. Messrs. Pope, Binden, and Clark, of Bristol, have furnished plans for the work.——The Walsall Town Improvement Commissioners, in choosing from the tenders for buildings, excavations, and gas holder for new gas works, have decided on the tender of Mr. Hale, of Walsall, for buildings and excavations, at 1,493*l.*, with deduction of 10*l.* if base to chimneys brick; and Messrs. Smith and Co., of West Bromwich, for making gas holder and removing old one, at a cost of 808*l.* 10s. The works are expected to commence the manufacture of gas at Christmas.——The Sheffield Water Company have caused blocks of gypsum to be deposited in their culvert, in order to prevent the water from imbibing poisonous impurities from the lead cisterns and service-pipes. This may be expected to take place by the water firstly imbibing the gypsum or sulphate of lime, of which it is to be presumed the analytical chemist, Mr. Haywood, who made the suggestion, has found the water to be deficient.——A stone tower, with a spire, is to be built on the church at Bootle, in place of the two unseemly towers, which have been removed. Other alterations are to be made, and seat-room for 400 additional sitters provided.——A German Lutheran Church is to be built at Hull.——The inhabitants of Brigg, in that vicinity, have resolved to erect a Corn Exchange by joint stock shares of 10*l.* each.——A monument has been placed in the east aisle of the north transept of York Minster, to Dr. Beckwith, who bequeathed 45,000*l.* to the cathedral, the Yorkshire Museum, the York Charity Schools, and and other laudable objects.——The repair of Knox's house in the High-street of Edinburgh being declared to be impossible, it is proposed to mark the stones, remove them piecemeal, and rebuild the house.——The repair of Jedburgh Abbey has been resumed by the Lothian family trustees. The east wing is now being restored.——Mr. Mackenzie, architect, Elgin, has constructed a design for the Culloden monument. The model represents a large, irregular, conical mass of rock, with a rough road winding through clefts, &c., to the summit, where, crowning a precipice, is a female figure, leaning on the rock, and mourning, along with her children. At prominent points are tablets, to be erected by clans, or in memory of individuals.——A church in Great Charles-street, Dublin, has been destroyed by fire.

RAILWAY JOTTINGS.

ON the Oxford, Worcester, and Wolverhampton line several hundred labourers, bricklayers, and miners have been discharged from the Mickleton tunnel from want of funds. Only forty men are now employed, and the works will shortly, it is said, be brought to a standstill.——On Wednesday week, in springing two arches of the bridge now building over the Teviot at Roxburgh, on the Kelso and St. Boswell branch of the Edinburgh and Hawick line, the pier gave way, and eight men were buried in the ruin, and killed on the spot.——The North Staffordshire Company have entered into a contract for the working of their whole line. An extensive coach manufacturer at Saltley, near Birmingham, is the contractor. There were fourteen tenders. The contract, however, is limited to the general traffic, rolling stock, and maintenance of permanent way, and does not interfere with the stations, clerks, and receipts. The company's engineer has the power to inflict a penalty of 10,000*l.*, if not satisfied with the fulfilment of the contract. The mileage rate for working and maintaining the locomotives, &c., is about 10d. for passenger trains, and 1s. for goods trains, and penalties will be incurred by late arrivals or departures.——A scramble for the Pickfordian or carrier class of pickings on the London and North-Western seems to be in progress. The company, it is said, take the singular liberty of breaking open such packages or parcels as they may suspect to contain goods for different parties separately directed, and themselves deliver the goods so separately packed, and appropriate the charges for delivery. Some carriers have had an interview with the Railway Board on this subject, and Mr. Labouchere is said to have admitted that a remedy must be provided. The company, it seems, defy the law, which saddles complainers with heavy expenses, even while they obtain favourable verdicts. Why should *small* carriers be treated on a different principle from the *great* carriers at St. Martin's-le-Grand? The post packages and mail bags are not broken open for the sake of such plunder: why should others be so,—and that, too, *ex facie*, on the mere *a priori chance* of twice chargeable contents? Should other railway companies follow such an example, why not steam and other shipping companies, coach and omnibus proprietors, and other carriers themselves of all kinds inclusive? And if so, what seal would be safe and sacred from such an universal parcel hunt? No parent even could safely send a lot of ticketed toys to each of his children, no friend enclose a few presents, without the chance of separate charges for the delivery of each, and none whatever *any* parcel or package, without affording a feasible pretence, on the part of carriers of all sorts, for breaking it open and examining its contents. It is for Government Custom-house authorities alone, with any show of propriety or right, to be allowed such a license, as that so cavalierly practised and insisted on by these North-Western Railway authorities—great though they be—in this free country.——There are two million of rivets in the tubular bridge over the Menai Straits, each an inch in diameter.——A hollow girder bridge, of make similar to the tubular, but with the rails fixed above in place of in the interior, is in course of formation, to cross the Trent at Gainsborough on the Manchester, Sheffield, and Lincolnshire line. Two principal hollow girders form the parapets, and the roadway is supported by transverse wrought-iron hollow beams, or tubes, rectangular in section. This bridge was designed by Mr. W. Fowler, and the tubes have been constructed by Mr. Fairbairn. The stone-work consists of a centre-pier, and two elliptical arches of 50 feet span each, terminated by the usual land abutments. The iron-work consists of two spans, together 308 feet, which gives a total length to the bridge of 460 feet. The principal girders are each 336 feet long, 12 feet high, and 3 feet 1 inch wide, having their tops formed of cells 18 inches wide, and 12 inches deep, to resist compression, and the bottom of double-rivetted plates, to withstand tension. They are fixed on the middle pier, and supported on the land abutments by rollers, resting on cast-iron plates embedded in the masonry, thus admitting of expansion and contraction. The first girder, if not now also the other, is already fixed.——Mr. Hennett, of Bristol, has just completed a wrought-iron bridge, which weighs 450 tons, and is intended to cross the Thames, at Slough, from the branch line of the Great Western to Windsor.

BENT TIMBER FOR ROOFING.

I OBSERVE that in your journal of the 23rd of May, Mr. John Hay, of Liverpool, has inserted a letter, the purport of which is to claim the merit of the application of bent planks for roofing purposes. His letter is a singular instance of forgetfulness. May I trespass upon you to set him right as to the originality of his discoveries?

Mr. Hay was employed as an architectural assistant upon the Rouen Railway, by Messrs. Mackenzie and Brassey in the year 1843. Whilst engaged on these works, he had the opportunity of examining the bridges of Bessons, Maisons Laffitte, Manoir, and Oissel, which were constructed under Mr. Locke's direction, with main ribs of bent plank.

To proceed to the use of such ribs in roofing did not require a great stretch of imagination. Such as was necessary was, however, made firstly by the foreman of the Rouen station, Mr. John Milroy. He made a model of a rib roof to cover the large shed of the station, building up the ribs with bent planks. This model Mr. Hay saw before he made his designs for the Scotch churches. Mr. Milroy's model was made in the spring; Mr. Hay's designs were made in the winter following.

Like all discussions upon the merit of inventions, the last comers have painful reminiscences "that the ancients have stolen our good things." Whether Mr. Hay knew of Col. Emy's work, or not, he had seen several of Mr. Locke's timber bridges; and he was well aware that a bridge upon the same principle had been constructed near Newcastle some years previously.

Mr. Tite executed a very beautiful roof over the Rue Verte station of the Rouen and Hâvre line with the main ribs of bent planks. Mr. Drake executed the roof of the station at Dieppe with elliptical ribs built in the same manner. I used similar ribs to support the intermediate principals in a large goods shed I built at Hâvre, so that there is far from being any novelty in the plan. Indeed, when the French possess two elaborate works upon the subject, one by Col. Emy, the other by Col. Ardant, and a multitude of memoirs, one of which is by Navier (a man gathered to his fathers seven years since), it is the height of absurdity, if nothing else, to claim the merit of the invention.

Paris. GEO. R. BURNELL.

ARCHITECTURAL MATHEMATICIANS; OR, MATHEMATICAL ARCHITECTS.

A WANT of mathematical acumen and lore has been, with some, a standing reproach against the architectural profession. Let such lovers of the abstract in form and number, if they be such, purchase and digest a recent work of Mr. H. P. Browning, architect,* and probably by the time they have mastered all its articles, definitions, and corollaries, they may be inclined to suspect that, after all, architects do know how to fathom the profundities of algebra and geometry, although they make no great boast of their powers and acquisitions. The profession are certainly deeply indebted to Mr. Browning for his most able contribution towards the removal of even the shadow

* "An Algebra of Ratios, founded on simple and general definitions, with a theory of exponents extended to incommensurable ratios, and the propositions of the fifth book of Euclid easily and symbolically deduced." By Henry B. Browning, Architect, Stamford. Cambridge: Macmillan, Barclay, and Macmillan. London: Simpkin, Marshall, and Co. 1849.

of a ground for such reproaches. The more immediate object of his work, however, is to establish an algebra of ratios, on the same footing as that of abstract numbers, and thus to dispense with the unmathematical expedient of regarding all magnitudes as commensurable with each other, and to furnish *definite notions* of the powers and roots of ratios in their most difficult and comprehensive forms. These purposes, in our humble opinion, he has accomplished in that efficient manner which might have been anticipated from his growing talent. "The application of algebra to geometry," as he observes, and "which is the great object of all who study mathematics with a view to the purposes of life, will thus be rendered more satisfactory, if not more conclusive, in its results; and the doctrine of proportion, as taught in the fifth book of Euclid, will be relieved of the circumlocution and tedious repetition in which his theory abounds."

Taking for granted that a certain degree of mathematical experience is requisite fully to comprehend the subject, he has assumed the results of arithmetical algebra, and notwithstanding the prejudices of some, has adopted the definitions and language of limits, being persuaded that a studied avoidance of the use of limits in the treatment of continuous magnitude is of no advantage to the student, and introduces difficulties equal at least to those it professes to remove. A few propositions, treating principally of the limits of concrete quantities, though apparently foreign to the work, have been introduced by way of furnishing concise and easily-remembered proofs of relations afterwards deduced; and having fully considered the ratios of concrete quantities, in the conclusion of the work, a definition of the notion of a ratio of ratios is appended.

We would willingly give a citation of the author's mode of dealing with his subject, but its subdivisions are so consecutively and logically linked, that it would be no easy matter to occupy a small space without being betrayed into yielding up a larger than our own geometrical limits will fairly allow.

AN ACCOUNT OF AN EXTRAORDINARY INSTANCE OF THE RAPID DECAY OF TIMBER, FROM DRY ROT, WHICH OCCURRED IN THE CHURCH OF THE HOLY TRINITY, AT CORK.*

So many naturalists and men of science having endeavoured to account for the origin of dry rot, I shall not advance any theory of my own on the subject, although I believe that much still remains to be inquired into respecting its causes and consequences; but with the view of attracting to it that attention which its importance demands, I beg leave to submit to the institution an account of an extraordinary case that occurred in Cork; at the same time urging on my professional brethren to record any other instances which may come within their knowledge, in order that those who may be disposed further to investigate the subject, may have the benefit of facts, given on the authority of practical men.

The parish church of the Holy Trinity in Cork, in the year 1827, having been found to be in a bad state of repair, and quite deformed from bad and unequal foundations, the parishioners resolved on building a new church; but through want of funds, not being able to carry their design into execution, an extensive repair was decided on. The tower was taken down, and one side wall and the end of the church was rebuilt.

This church is 100 feet long by 50 feet wide, divided into a nave and aisles by double tiers of columns, the lower tier being of solid timber, supporting galleries, and resting upon rude rubble stone piers in the vaults below, the upper tier being of built timber columns supporting the roof. It is necessary to describe the building, in order to show that from retaining a part of the old timber-work the evil of dry rot emanated.

For years there had not been anything intervening between a great part of the body of the old church and the burial vaults beneath, except a timber floor, and though the interior was spacious, and even handsome, this abomination long continued.

Immediately under the floor of the church, and open to the vaults, longitudinal beams of Irish oak of from 12 to 14 inches square had been placed, resting on piers, and forming supports for the joists. Though these oak beams were decayed for an inch deep at their surfaces, sufficient of the timber (as it was thought) remained sound, and it was decided that neither they, nor the piers upon which they rested, should be removed. The vaults are arched over; memel joists, 6 inches by 4 inches, were placed on the vaulting, and connected with the oak beams which rested on the piers; the floors were removed; the old pews were replaced; new columns, coated with scagliola, were erected over the galleries, the old ones in the lower tier retained; and the whole repairs having been thus completed, the church was re-opened for divine service in April, 1829.

In November, 1830 (but eighteen months afterwards), the congregation was annoyed by an unpleasant smell, which, on examination, was found to proceed from dry rot of the most alarming nature.

On opening the floors under the pews a most extraordinary appearance presented itself. There were flat fungi of immense size and thickness, some so large as almost to occupy a space equal to the size of a pew, and from 1 to 3 inches thick. In other places fungi appeared, growing with the ordinary dry rot, some of an unusual shape, in form like a convolvulus, with stems of from a quarter to half an inch in diameter. When first exposed, the whole was of a beautiful buff colour, and emitted the usual smell of the dry rot fungus.

Whatever may have been the surprise at the rapid growth of the plant, its action on the best Memel timber was a source of greater astonishment. I took up, with nearly as much ease as I would a walking cane, that which eighteen months before, was a sound piece of timber (one of the joists) from 12 to 14 feet long, 6 inches by 4 inches scantling; the form of the timber remained as it came from the saw, but its strength and weight were gone. The timber of the joists and floor over the new brick vaulting was completely affected by the dry rot, which was rapidly spreading to the lower part of the columns under the galleries, so that at the rate the infection proceeded, the total destruction of the building would soon have been effected.

During a great part of the time occupied in the repairs of the church the weather was very rainy. The arches of the vaults having been turned before the roof was slated, the rain water saturated the partly decayed oak beams, before described. The flooring and joists, composed of fresh timber, were laid on the vaulting before it was dry, coming in contact at the same time with the old oak timber, which was abundantly supplied with the seeds of decay, stimulated by moisture, the bad atmosphere of an ill-contrived burial place, and afterwards by heat from the stoves constantly in use. All these circumstances account satisfactorily to my mind for the extraordinary and rapid growth of the fungi.

The large sum of 4,000*l.* having been so lately expended on the church, caused great anxiety to the parishioners. The opinions of the most experienced professional men were taken, and all agreed that the first effort should be to cut off the communication with the galleries, the disease having already extended 3 feet upwards on the lower columns.

The new brick vaulting was found penetrated by the fungi, imposing the necessity of having the vaulting, as well as all the timber work in the lower part of the church, entirely and carefully removed. Newer and thicker vaulting was then substituted for that which was taken down, and the whole of the floor over it was laid with Yorkshire and Shannon flags set in Roman cement. New pews were erected, resting on iron chairs let into the flagging; the flooring of all the pews was constructed so as to be occasionally removed for inspection; Roman cement was internally used next to and at the bottom of the walls, and iron columns were substituted for those of timber in the lower tier. Here I must notice the clever plan of my friend, Richard Beamish, Esq., C.E., who caused a screw to be placed in the head of each iron column, which was screwed up so as to take the load before the temporary supports were removed, thereby avoiding the fracture consequent on ordinary wedging, so that all was effected without any disturbance or sinking of the galleries, and the columns which supported the roof, &c., the screws in each column being accurately adjusted, so as to meet the pressure from above.

The expense incurred by these repairs was very considerable; but it is satisfactory to state that there has not been a re-appearance of the dry rot since that time, now a period of sixteen years.

Of late the subject has been diligently investigated by men of science, including the chemist and the naturalist. It is not my intention to dwell on the merits of the various preventative processes that have been suggested, or for which patents have been taken out, as my object is only to give a simple account of a very peculiar case of the disease, the facts of which strengthen me in my opinion, that the best economy in extensive repairs is to be cautious in the use of old timber, and if it must be used, not to permit new timber to come in contact with it.

I shall conclude by observing that the seasoning of timber is seldom sufficiently attended to, and that the characters of professional men are frequently injured by not being more stringent in demanding proof of the stacking and seasoning of timber for a sufficient time.

* By Sir Thomas Deane. From the "Transactions of the Institution of Civil Engineers of Ireland." Vol. II. Dublin, S. B. Oldham; London, Whittaker.

Miscellanea.

OXFORD ARCHITECTURAL SOCIETY.—At the tenth annual meeting of the society, which took place in the society's rooms, Holywell, on Wednesday, the 20th of June, the Rev. W. Sewell, president, in the chair, a hope was expressed that the society might be of use in giving plans for almshouses, schools, &c., which would assist a parish clergyman when unable to employ an architect. The chairman stated that the committee had it in contemplation to establish some elementary lectures in architecture. The Rev. Mr. George Williams, President of the Cambridge Architectural Society, then read a paper on the church of St. Sophia, at Constantinople. The secretaries intimated that they would be glad if any architect or parish clergy would furnish them from time to time with plans of schools, &c., with the actual cost of erection. We are the last persons in the world to attempt to prevent generous actions. All we have to say is, that if the Church Commissioners and other bodies obtain gratuitous plans of *churches*, to forward to those parishes who wish to build such,—the Poor-law Commissioners, plans of *workhouses*,—the Inspectors of Prisons, plans of *jails*, &c., there will be little employment for poor architects.

ST. ANDREW'S, TRENT, SOMERSET.—The present rector of this church, the Rev. W. H. Turner, a few years since lengthened the nave one bay to the westward, at the same time adding a little chapel on the north side of the nave to contain the organ, and a new roof to nave and chancel, unfortunately, groined with plaster ribs and spandrils; the whole of the seats are rendered uniform and copied from existing specimens; the lower part of the tower, which forms the south transept, is filled with plainer ones; a pulpit was given by the rector, and the chancel seats placed stallwise. The effect of the chancel, perpendicular in style, is entirely destroyed by the plaster roof, &c. Series of arches run in plaster beneath the windows immediately surrounding the sanctuary, the easternmost filled with the Decalogue written on porcelain. The screen still remains. All the windows, save in the tower, are filled with stained glass, those in the nave by Wailes. The tower with spire is of the geometrical decorated style, and is built at the south-east end of the nave, forming a transept: on the west side, and abutting against the tower, is a porch of the same date. During the last year, the pinnacles on the parapet of the tower have been renewed, together with the tracery of the windows, the sanctuary paved with Minton's tiles, and a brass, by Waller, placed in the chancel to the memory of a former rector of the parish. The latter works have been carried out under the superintendence of Mr. Withers.

PROJECTED WORKS.—Advertisements have been issued for tenders, by 21st inst., for the erection of the Towcester National Schools; by 17th, for building the new Unitarian Chapel, at Banbury; by 11th, for the erection of the new church of St. Peter, at Croydon; by 23rd, for the construction of the drainage and water supply, and other sanitary works, at the workhouse premises, Amersham, Bucks; by 24th, for the erection of Harlow new schools; without delay, for the execution of the works of Sketty new church (Swansea); by 14th, for the erection of a school house and master's residence at Abergwessin (Hereford); by 10th, for the erection of the Welsh Educational Institution at Llandovery; by 9th, for the erection of the Literary and Scientific Institute, Town-hall, and County-court, at Stonehouse (Devon); by 6th August, for the execution of contract No. 1 of the London-bridge station enlargement, comprising substructure of new station, ballast, permanent way, &c.; by 10th inst., for the erection and completion of a goods shed at Mirfield station of Lancashire and Yorkshire Railway, and by 17th, for passenger-station at Bradford, on same line; by 20th, for making new line of road in parish of Leigh (Worcester); by 7th, for bricklayers', joiners', stone-masons', slaters', plumbers', and painters' works in repairing buildings for Trinity House; by 11th, for repairing public conduits and water-works at Southampton; by 9th, for construction of service reservoir for Sunderland Water-works; by 18th, for fitting up large gas-holder at Paisley; and by 11th, for the several works in building St. Matthias's Church, Bristol.

THE POSITION OF RAILWAYS.—Mr. A. Gordon, C.E., has recently republished his past anticipations of the present state of things, from which it does appear that since the outset of the railway system he has repeatedly warned the public of the false principles on which its direction and conduction were being carried on. As to recent disclosures, he estimates that even admitting the railway capital at large (200,000,000*l.*) to be now depreciated, so as to be only 100,000,000*l.*, "the grand railway account would not show quite 1 per cent. per annum from which to pay dividends." And "still," he adds, "there is no provision made for replacement of capital." The high-blown bladder, which he appears to regard as still poised on high in full inflation, "must ere long burst," he believes; and, accordingly, he once more warns all and sundry not *yet* shareholders, "that pending the requisite remedial measure, the owners and representatives of the two hundred millions are not term-tied partners, but fluctuating shareholders, whose best chance of escaping from the dilemma is by keeping up the apparent value of the shares *till some other parties take their places.*"

TANN'S RELIANCE DETECTOR LOCK.—In this, which is a lever detector lock, a new feature has been introduced, namely, the protecting one or more of the levers *by a guard.* The guard is placed on one of the levers, and protects the lever either above or below it, so that even if a false key or pick succeeded in lifting to the proper height all the levers with unprotected fronts, it could not raise the one *behind* the guard, and the slightest extra lift of the guarded lever at once fixes the detector, and then the proper key only can regulate it. The addition seems to give much increased security.

THE MARBLE ARCH.—We have no faith in the statement of some of our contemporaries that the marble arch is going to Windsor. One correspondent puts before us the suggestion made in the *Athenæum*, that it should be erected in front of the British Museum. We incline much more strongly to the suggestion in our own pages (among twenty others), that it should be made to form a fitting entrance to St. James's-park at Spring-gardens, where such is much needed.

BRITANNIA AND CONWAY TUBULAR BRIDGES.—At this moment, our readers may be glad to know of the publication of a brief description of these bridges.* Of a more important work on the same subject, by Mr. Fairbairn, just now issued,† maintaining the right of Mr. Fairbairn to a share of the public applause, we shall take an opportunity to speak.

* Chapman and Hall, Strand. † Weale.

ELECTRO-TELEGRAPHIC PROGRESS.—The *modus operandi* of the copying telegraph has at length been revealed. According to the specification of the patent, two cylinders are made to revolve by clockwork, regulated by an electro-magnet four times in each revolution, so as to be perfectly coincident in time of rotation. On one is rolled a sheet of tin foil, and on the other a sheet of paper saturated with a solution which electricity will easily decompose and blacken through a metallic pointer, which presses on it and conducts the current to the paper after it passes from the tin foil on the other cylinder, through a similar metallic pointer pressing on it. The apparatus thus prepared, and the cylinders made to revolve, with the electricity in action,—the pointers are carried gradually from one end of the cylinders to the other, so that a spiral series of dark lines, closely continuous, is described on the paper from end to end, *unless the current of electricity be intermitted*, which it is by means of writing, or other characters or forms, on the conducting tinfoil round the other cylinder, traced with a nonconducting varnish in place of ink. It is thus manifest that an exact copy of the tracing will be picked out as it were by blank intervals in the black or blue lined spiral tracery on the papered cylinder, the pointer ceasing to blacken the paper wherever its fellow passes over or across the varnish on the tinfoil; and thus, by a contrivance of the most ingenious and simple description, accomplishing one of the most astonishing miracles of this age of wonders. With a single wire, 400 letters per minute can thus be transmitted. And the wonder does not end here, for the message or letter transmitted by correspondents (*to their own paper and from their own tinfoil, of course, if desired*), with its signature, &c., is a perfect fac-simile of the original in form or tracery, only written, as it were in white ink, on a dark ground like line engraving. Drawings, it is clear, too, or even portraits, plans, &c., may as readily be thus not only copied, but transmitted hundreds of miles at one and the same moment. The name of the inventor of this triumph of genius is Blakewell. The specification of the patent includes improvements in opening and closing communication with different stations by means of one wire, and points to the establishment of a system of half-hourly dispatches. The facilitation and cheapening of newspaper reports too by such means are very obvious, especially as shorthand can thus be still more readily and rapidly copied than ordinary writing.

GUTTA PERCHA TUBING.—A series of experiments have just been concluded at the Birmingham Water-Works, relative to the strength of gutta percha tubing, with a view to its applicability for the conveyance of water. The experiments were made under the direction of Mr. Henry Rofe, engineer, upon tubes of three quarters of an inch diameter and one-eighth thick of gutta percha. These were attached to the iron main and subjected for two months to a pressure of 200 feet head of water, without, as we are told, being in the slightest degree deteriorated. In order to ascertain, if possible, the maximum strength, one of the tubes was connected with the Water Company's hydraulic proofing pump, the regular load of which is 250 lbs. on the square inch. At this point the tube was unaffected, and the pump was worked up to 337 lbs., but, as we are informed, it still remained perfect.

FOLEY'S "INO AND INFANT BACCHUS."—In the Court of Queen's Bench on 29th ult., Lord Charles Townsend sought to recover from Mr. Foley 250*l.* had and received to form a group in marble on the model exhibited at Westminster Hall as "Ino and the Infant Bacchus," to be executed for 550 guineas. His lordship, however, during its progress, regretted he had not commissioned a single figure, and ultimately, on an understanding with Mr. Foley's brother, claimed the "refusal" of the group. Mr. Foley thereupon sold it to Lord Ellesmere for 750 guineas, and Lord Townshend applied for a return of the 250*l.* advanced. The defendant urged the usual practice of bargains with sculptors in cases where the result of their commissioned labour was rejected, namely, payment of one-half the price in advance and no repayment, leaving, in this case, 38*l.* 15*s.* due to the defendant, who, however, had offered to refer the matter in dispute to Sir Robert Peel or other competent arbitrator. Lord Denman recommended Lord Townshend to commission a single figure,—a proposal at once acceded to by both parties. After withdrawing a juror and entering a nonsuit, with costs to neither, Lord Denman decided, as requested, that the value be fixed by an arbiter, mutually agreed on, either party paying the difference to the other, if above or below 200*l.*

CHESTER.—Curiosity has been awakened by some archæological discoveries in Common-hall-street, Chester. The workmen engaged in excavating for the public sewers first came across a footpath with curb stones set on edge at a depth of 7 feet, and afterwards laid bare what appeared to be the foundations of a row of columns three or four yards apart, set on a strong bed of concrete, 10 feet below the level of the present street. On the fourth of these foundations there still remained the base of a column. Many fragments of Roman bricks and tiles, with Latin letters on them, were found at the same depth. They have crossed, also, another of those mysterious passages in Common-hall-street, about 5 feet by 5 feet, cut out of the rock 11 feet 6 inches below the surface, but whether it has been used as a subterranean passage, or for the more ignoble purposes of a drain, there seems to be a difference of opinion. The borough engineer is using every exertion to collect and preserve these antiquities. As we hope to be present at the meeting of the British Archæological Association, to be held here at the end of the month, we may have something more to say of this hereafter.

THE SHANNON IMPROVEMENT WORKS.—On Monday from 600 to 700 men were placed upon the works, which consist in deepening the bed of the river, and clearing away the remains of the ancient bridge which formerly connected the provinces of Leinster and Connaught. A good deal of disappointment was felt by those who had been rejected, many of the starving creatures having travelled a long distance with the hope of being engaged. Yesterday and to-day the number of hands has been considerably increased, and now upwards of 1,500 men find employment on these works. —*Athlone Independent.*

WALL PAINTINGS, CULLOMPTON CHURCH.—The walls of Cullompton Church, Devon, now being restored, are found, upon partially scraping off the white lining, to be covered interiorly with paintings in distemper. In the north aisle is a figure of St. Christopher, 9 feet high, with fishes and a mermaid at his feet, and his green twisted palm staff: other figures on an equally gigantic scale are sadly cut up by marble monuments; one of these is St. Michael weighing departed spirits: a demoniacal horned head is grinning between the cords of the lighter scale. There is another figure with a sort of pontifical crown, and bearing a wand, cruciform at its termination. On the north side of the nave clerestory is St. Clara in an orange-coloured robe, with a mitre terminated by a ball: her name is on a ribbon beneath. There are other specimens of the colourist's art in foliage adapted to spandrels, which, as well as the dresses of the figures, also the mouldings of the pier arches, are chiefly of an Indian red colour. It is a matter of regret to many that our antiquaries do not unveil more of these figures and their inscriptions before the decayed plastering is renewed, which it necessarily must be very shortly.

E. ASHWORTH.

TENDERS.

For building new farm house, and rebuilding farmery at Arlsey, Beds, for Mr. S. B. Edwards: Mr. Goddard, architect:—

Betts and Warren, Stevenage	£3,020
Patrick, London	2,870
Cobb, Bedford	2,500
Francis and Bryant, ditto	2,468
Newton, Hitchin	2,358
Burford and Jackson	2,195

For erecting a new church at Skewen, near Neath, stated to be an enlarged copy of the Roman Catholic Church erected in Swansea a few years since, in the Early English style:—

Hughes and Davies	£1,057
Powell	999
Townsend	787

The tenders for the Catholic Church, 10 feet less in length and 3 feet in width, were:—

Jones	£1,470
Pilditch	1,350
Morris	1,350
Strawbridge	1,109
Rayner	1,054
Taylor (accepted)	1,040
Prater and Dyer	885

TO CORRESPONDENTS.

Received.—"E. B.," "T. B. S.," "H. R.," "A Subscriber (we know of no none. THE BUILDER contains the most information on the subject of trains)," "W. M. B.," "One of the Shelved," "H. F. S.," "J. K.," "J. J.," "J. C.," "F.," "J. B. A.," "T. M.," "J. T. W." (thanks), "Old Architect" (will find letter on the subject in present number), "W. L." (we may yet use it), "J. W.," Derby (must allow us to retain our opinion: no offence was intended). "An Account of the Construction of the Britannia and Conway Tubular Bridges, with the complete history of their progress from the conception of the original idea to the conclusion of the elaborate experiments which determined the exact form and mode of construction ultimately adopted," by Wm. Fairbairn, C.E. (London, John Weale, 1849); "On Copyright in Design in Art and Manufactures," by T. Turner, of Middle Temple (London, F. Elsworth, 1849); "The Drainage of Towns: a Lecture delivered at the Athenæum, Plymouth, January 25, 1849," by A. Hamilton Bampton, Engineer to the Devonport Water Company (London, Whittaker and Co., 1849); "Morris's Tables for Sawing, Planing," &c. (Miller and Field, Lambeth.)

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

PAPER SPLITTING.—Artists, Amateurs, and others desirous of learning this novel and interesting Art, may receive FULL INSTRUCTIONS, by letter, by which they may SPLIT PAPER with the greatest accuracy and expedition, so as to separate engravings from letter-press, &c., on application by letter, prepaid, inclosing 5s. in postage stamps, to "ZETA," 3, Walbrook-street, New North-road, London.

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For use it is mixed with Linseed Oil, and applied with a brush, the same as ordinary paint, to wood, iron, tin, zink, canvass, paper, &c. It hardens gradually and becomes fire-proof. It is particularly suitable for roofs of buildings, steamboat and ship decks, railroad bridges, fences, &c. A roof coated with this article is equal to one of slate, at a vast saving of expense. It makes the most durable covering for ironwork exposed to the weather; and, as it is susceptible of a high polish, has been used to great advantage by coach and cabinet-makers in America.

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JOHN A. WEST, Secretary.

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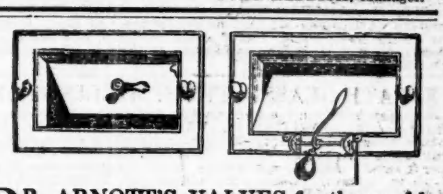

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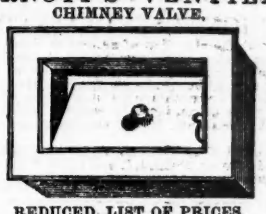

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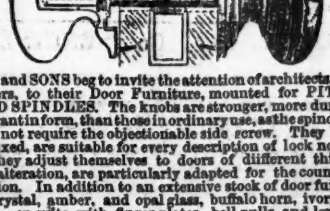

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PORTLAND CEMENT, as manufactured by J. B. WHITE and SONS, possesses all the properties of the best Roman Cement, but has the advantage over that material of wholly resisting frost; and when used as a stucco it does not vegetate or turn green in damp situations, and requires no colouring. Employed as an hydraulic mortar for brickwork, it carries four to five measures of sand to one of cement, and is proved by trial to become harder and stronger in these proportions than Roman Cement with but one measure of sand. This superior connecting power, combined with its eminently hydraulic properties, point it out as the fittest material for building sea and embankment walls, the lining of reservoirs, cisterns, and baths, and for all those purposes where strength and a perfect resistance to water are required.
Manufacturers—J. B. WHITE and SON, Millbank-street, Westminster, and 36, Seel-street, Liverpool.

PORTLAND CEMENT, solely MANUFACTURED by WILLIAM ASPDIN, Son of the Patentee.—Messrs. ROBINS, ASPDIN, and Co. request reference to No. 296, page 491; and also Nos. 284 and 285, pages 343 and 351 of "The Builder," for accounts of EXPERIMENTS on the strength of Portland Cements, whereby the great superiority of their Cement is manifest. This Cement has been proved for upwards of Twenty years in the Thames Tunnel to resist the action of water; it is stronger in its cementitious qualities, harder, and more durable than any other description of Cement; it does not vegetate, oxydate, or turn green; nor is it affected by any atmospheric influence whatever the climate, resisting alike the action of frost and heat. It is manufactured to set in from five to sixty minutes. For all purposes that Cement is applicable the Proprietors challenge competition.—Orders received by Messrs. ROBINS, ASPDIN, and Company, at their Manufactory, Northfleet, Kent, and their Wharf, Great Scotland-yard, Whitehall; also by their Agent at the Depôt, 1, Back Goree, Liverpool.

MARTIN'S PATENT FIRE-PROOF and ORNAMENTAL CEMENT—REDUCTION of PRICE.—The Patentees beg to inform their Friends and the Public that they have made arrangements which enable them to offer this invaluable cement at a considerably reduced price. It has now been before the public so many years, and has obtained so high a standing in the estimation of all who have used it, that it is unnecessary to comment on its merits. The Patentees, however, feel called upon to observe, that by its use—from the greater amount of surface which a given quantity will cover, and the small amount of labour required in working it, a saving of 25 to 30 per cent. is effected as compared with other cements for internal use. Specimens shewing its beauty, hardness, and applicability to all plain and ornamental purposes, may be seen; and the Cement in any quantity obtained of the Patentees, Messrs. STEVENS and SON, at the Plaster and Cement Works, 186, Drury-lane, London.—Agent for Liverpool.
Mr. GEORGE NEWTON, No. 6, Lawton-street, Bold-street.

JOHN'S and Co. PATENT STUCCO CEMENT and PAINT.—GREAT REDUCTION of PRICE.—The Patentees beg to inform the trade and the public generally, that in order to induce a more extended adoption of these excellent materials, and to bring them into direct competition with the inferior articles in common use, they have determined to reduce the price nearly 25 per cent., confidently trusting to a mutually advantageous result. These materials, for their beauty, durability, imperviousness, perfect resistance to frost or heat, and great cheapness, fully justify the confidence reposed in them, as shown by numerous testimonials. For INTERIOR SURFACES this cement possesses the following remarkable properties: having no caustic qualities, it may be painted on or papered within a few days after its application, and a new house may thus be rendered habitable without any delay. It never blisters, cracks, or vegetates; very soon becomes as hard as stone, and may be cleaned with a brush and water.—Prospectuses, specimens, and every information connected with its use, price, &c., may be obtained from the sole agent, PHILIP HARE, at the Warehouse, 23, Steel-yard, Upper Thames-street.

TO PLASTERERS, BUILDERS, &c.
JOHN'S and Co. PATENT PERMANENT STUCCO WASH.—The attention of the trade is requested to this permanent wash, which cannot be equalled in its properties of beauty and durability for exterior stucco or brick, and being a non-absorbent, is admirably adapted for interior surfaces, for railway stations, union workhouses, schools, asylums, barracks, stables, prisons, &c. It will not wash off, may be tinted to any colour, and 1 cwt. will cover 300 yards.—Price 10s. per cwt. Sole agent, PHILIP HARE, 23, Steel-yard, Upper Thames-street.

TO THE BUILDING PUBLIC.
FIRST-RATE ORNAMENTS in PORTLAND, ROMAN and other CEMENTS, and PLASTER of PARIS, at reasonable prices, consisting of Vases, Balusters, Capitals, perforated Panellings, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-Shafts, Soffits, Bed-mouldS, Paterae, &c., &c. Centre Flowers from 10 feet diameter downwards. An assortment of Shop-front Trusses always ready for fixing.—HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane.

GRAY STONE and WHITE FLAME LIME WORKS, BEWLAY CLIFF, on the Medway, KENT.—GEORGE POTTER and CO., having added the old and well-known business at the Purfleet Wharfs, Earl-street, Blackfriars, and Camden-town, to their former town establishments, are ready to supply Contractors, Builders, Gas Companies, and the Trade generally, with Gray Stone, White Flame, and Chalk Limes, upon the usual terms. Annexed is a list of their wharfs:—
City—Purfleet Wharf, Earl-street, Blackfriars.
Pimlico—Grosvenor Basin.
Chelsea—Druce's Wharf.
Paddington—No. 19, North Wharf (adjoining Great Western Termini).
Camden-town—James-street.
City-road Basin—Wharf-road.

COMPOSITIONS for WRITING with STEEL PENS.—STEPHENS'S WRITING FLUIDS compose the most splendid and durable colours, and the most indelible composition which art can produce; they consist of a BLUE FLUID, changing into an intense black colour. PATENT UNCHANGEABLE BLUE FLUIDS, remaining a deep blue colour. Two sorts are prepared, a light and dark blue. A superior BLACK INK, of the common character, but more fluid. A superior CARMINE RED, for contrast writing. A liquid ROUGE CARMINE, for artists and contrast writing, in glass bottles. A carbonaceous RECORD INK, which writes instantly black, and being proof against any chemical agent, is most valuable in the prevention of frauds. A liquid MECHANICAL and ARCHITECTURAL DRAWING INK, superior to Indian Ink. Marking inks for linen, select steel pens, inkholders.—Prepared by the inventor, HENRY STEPHENS, 54, Stamford-street, Blackfriars, and sold by booksellers and stationers everywhere, in bottles, at 1d., 2d., 3d., 6d., 1s., and 3s.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 315, Oxford-street.

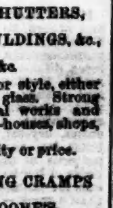
PLATE GLASS.—THOS. MILLINGTON begs to inform the trade that he has now ready for Sale, a large quantity of BRITISH PLATE GLASS, which he can offer at the following low prices:—In sizes, under 1 foot super, 1s. 2d.; under 1 ft. 6 in., 1s. 6d.; under 2 ft., 1s. 9d.; and under 3 ft., at 2s. per ft. super. Also, Roughed Plate, in various substances, from 1-8th in. upwards. Observe the address—87, BISHOPSGATE-STREET WITHOUT.

PATENT PLATE GLASS.—HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff of PRICES for the above is now ready, and will be forwarded on application. A REDUCTION of about 40 per cent. has been made on the usual Glazing sizes.—Sheet, Crown, and Ornamental Window-Glass Warehouse, 35, Soho-square, London.—ROUGH PLATE GLASS.

THE UNION PLATE GLASS COMPANY beg to call the attention of architects, surveyors, builders, large consumers, and the trade generally, to the quality, colour, and substance of their highly-finished glass, and as the discounts vary according to size, they prefer giving a special estimate for each quantity required. To encourage the use of Plate Glass for glazing purposes, the price is considerably reduced, which will, for its durability and appearance, insure the preference to any other description.
ROUGH PLATE GLASS supplied for skylights, warehouses, workshops, and flooring, 3-8ths, ½, ¾, and 1 inch thick.
London Warehouse, 99, Hatton-garden, Holborn.
H. CHRISTIE, Agent.

REGISTERED
SOLID AXLE SASH PULLEY.—This pulley, after having been submitted to the most severe test, is allowed to be superior to every other made for strength and durability. It is fixed with the same facility as the common axle pulley, and comes equally low in price. May be had from any of the Birmingham or Wolverhampton factors. The Crane Foundry Company, Wolverhampton, Proprietors and Sole Manufacturers.—No. 8 is all iron; No. 9, brass front and wheel with iron axle; No. 10, brass front and wheel with brass axle.

CHAS. WM. WATERLOW,
MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.


SHOP FRONTS, SASHES and FRAMES,
DOORS, &c., MADE FOR THE TRADE.
JOHNSON and PASK,
1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices

orwarded by return of post, to any part of the country.

HURWOOD'S PATENT APPARATUS for MOVING and FASTENING WINDOWS, &c.
GENERAL DESCRIPTION.—This invention recommends itself in all its applications by its simplicity, efficiency, and certainty of action, and entirely dispenses with all pullies, weights, cords, springs, setopes, fastenings, &c. A principal feature in the invention is the application of the screw, or worm working into a wheel or rack, as a prime mover. The apparatus moves with ease and certainty; is very durable, not likely to be out of order; is perfectly secure in every position, and is applicable to conservatories, French casements, folding shutters, stables, ventilators, skylights, ship scuttles, deck and stern lights, and to all descriptions of windows, and is particularly adapted to public buildings, where security is an important object, as in lunatic asylums.
Further particulars may be had upon application to the Patentee, and also the terms upon which licenses are granted.
*** Illustrative Catalogues may also be obtained from the Patentee, Ipswich, by inclosing twelve stamps, to cover postage.

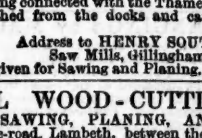
IRON SHUTTERS.—The PATENT CONVEX REVOLVING IRON SHUTTERS are cheaper, twelve times stronger, work easier, cannot run down, and roll up in one-third less room than any other shutters made. Harcourt Quincey, Patentee.
CLARK and Co., Sole Manufacturers, and of IMPROVED DRAWN ORNAMENTAL METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALL-BOARD PLATES, &c. &c., in brass, copper, and zinc. WROUGHT-IRON GIRDERS, HOT-WATER APPARATUS, and metal works of every description connected with buildings. Steam engines, millwork, and machinery. CLARK and Co., Engineers, 238, Wapping. Models can be seen and every information obtained at 458, Oxford-street, and 4, Moorgate-street, City. Agent for Scotland, Mr. G. BRIGSTOCK, 17 George-street, Edinburgh.

BUNNETT and Co., ENGINEERS,
Patentees of
REVOLVING IRON AND WOOD SAFETY SHUTTERS,
and of
ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c.,
IN BRASS, COPPER, ZINC, &c.
FOR SHOP-FRONTS, SKYLIGHTS, &c.
Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.
E. and Co. challenge competition as to either quality or price.
Designs furnished and estimates given.
IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.
SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.
Office of the Patentees, 28, Lombard-street, London; and at the Works, Deptford, Kent.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

A REDUCTION in the PRICE of FLOOR BOARDS.—ALFRED ROSLING begs to inform the Trade and Consumers generally, that he has REDUCED the PRICE, and keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, planed to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

GREAT REDUCTION IN THE PRICE OF FLOOR BOARDS AND MATCH BOARDING.—THOMAS ADAMS (late S. Dare), Mahogany and Timber Merchant, Bermondsey New-road, Southwark, near the Bricklayers' Arms, begs to inform his friends and the trade generally, that he has in stock a large assortment of the above goods, fit for immediate use, at prices which only require a trial to prove their decided cheapness. Also mouldings prepared by machinery from the very best material, and in a superior manner; cut deals and scantling of every dimension; mahogany, cedar, rosewood, wainscot, elm, beech, oak, &c., in planks, boards, veneers, and logs; pantile, oak, and fir laths; wheelwrights' goods. All sawn and prepared goods (except timber) delivered free of expense; sawing charged at mill prices. Very extensive drying sheds.

MUIR'S PATENT  PLANING MACHINE.
SAW MILLS, GILLINGHAM-STREET, PIMLICO.
TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.
Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

GENERAL WOOD-CUTTING COMPANY.—SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, between the Suspension and Waterloo Bridges. SAWING and PLANING in all their branches executed with the greatest despatch and punctuality. A large Stock of seasoned and beautifully WORKED MOULDINGS, consisting of upwards of 100 different patterns kept constantly on hand; also an extensive assortment of dry prepared FLOORING BOARDS, of all qualities and at reasonable rates.

PHILLIPS, ALLCARD, and CO.'S IMPERIAL DEAL SAW-MILLS, WENLOCK-ROAD CITY-ROAD, beg to invite the attention of builders, carpenters and the trade, to their well selected stock, consisting of a large assortment of TIMBER, DEALS, PLANKS, and BATTENS, of every description, and thoroughly seasoned. They also have constantly on hand, and ready for immediate use, white and yellow prepared FLOORING BOARDS of all thicknesses, and matched lining, cut and planed to a parallel breadth and thickness. And they are enabled to offer all their goods at very moderate prices

TO BUILDERS AND OTHERS.
W. GREEN can supply English OAK, cut into any sized quartering, from 9l. 10s. to 10l. per load. Also, Oak Posts and Railings equally low. Delivered at Paddington or the City Basin. For cash.—Address, W. GREEN, Mrs. Parsons', 2, Upper Holland-street, Kensington.

TIMBER PRESERVING COMPANY.—(PAYNE'S PATENTS).—The Directors beg to draw the attention of engineers, architects, contractors, and builders, to their method of preparing timber against rot, fire, and the ravages of worms, &c. Every information as to stations, charges, &c., can be obtained at their chief office, Whitehall-wharf, Cannon-row, Westminster, and at their several stations in the country.

DESICCATED WOOD.—DAVISON and SYMINGTON'S PATENT.—Builders, Cabinet-makers, and others, will find it much to their advantage to patronise this new process of seasoning. The greenest wood can thus not only be seasoned in an incredibly short space of time, at a small cost, but is rendered stronger, entirely free from shrinkage, and in every respect better than wood treated in the ordinary way; thereby saving capital, interest of money, insurance, and all the other inconveniences attending the keeping of a large stock.
The DESICCATING SAWING and PLANING MILLS are situated at PLOUGH BRIDGE, ROTHERHITHE, adjoining the Commercial and East Country Docks, from whence parties obtaining their material can have the same converted as required, and sent home fit for immediate use.—T. GIRLING, Manager.
For licenses to use the patent, scale of prices, or other information, address ANGUS JENNINGS, Secretary, Patent Desiccating Company, 41, Gracechurch-street, City.

TO ARCHITECTS, BUILDERS, UPHOLSTERERS, AND OTHERS.
WOOD CARVING done in the cheapest and best manner. Estimates given to any amount. Pulpits, reading-desks, altar-rails, stalls, and other church fittings supplied complete. Old carvings restored by J. STALON, Wood Carver and Manufacturer, 42, Berwick-street, Soho, London.

JORDAN'S PATENT MACHINE CARVING and MOULDING WORKS for WOOD and STONE, Belvedere-road, Lambeth, and 154, Strand.—TAYLOR, WILLIAMS, and JORDAN beg to call the attention of the building community to a new feature of their establishment, and, at the same time, to thank their numerous patrons and friends for the very liberal support they have lately experienced, which, they assure them and the public, it will be their constant endeavour to deserve, by giving their customers an increasing share of the advantages arising from the constant improvements in the machinery which they have just succeeded in applying to the production of the most intricate carving in Caen and other freestones, and in statuary marble.
T., W., and J. particularly solicit the attention of architects and builders to the fact that, by the use of this machinery, a very large saving, both of time and money, is effected,—so great, indeed, that in many cases they can deliver a well-finished article in Caen stone for less money than it can be obtained in cement, while their wood-carving will, in some cases, be found to come into close competition with the best kinds of composition ornament.—For prices and estimates apply at 154, Strand.
TESTIMONIAL FROM CHARLES BARRY, ESQ.
"Westminster, May 16th, 1848.
"Gentlemen,—In reply to your letter requesting my opinion of your Patent Carving Machinery, I have much pleasure in stating, from an experience of more than two years, in its application to the production of the wood carvings of the House of Peers, and other apartments of the New Palace, at Westminster, that I am enabled to make the most favourable report concerning it, and to add that it has more than justified the favourable terms in which I recommended it in 1845 to her Majesty's Commissioners of Woods and Works for adoption.—I remain, Gentlemen, yours faithfully,
"CHARLES BARRY."
Messrs. Taylor, Williams, and Jordan."

A CARD.
BRASS and IRONFOUNDERS and Consumers of Coke are respectfully informed that they can be supplied with the far-famed BRANCEPETH COKE at 30s. per ton, which is allowed to be unequalled for strength and purity; and those who have used it certify that it is 20 per cent. cheaper than any other coke in use. Also, FIRE BRICKS, the best that has been introduced into London.—All orders to Mr. MITCHELL, Deadhead Coal and Coke Wharf, Bermondsey.